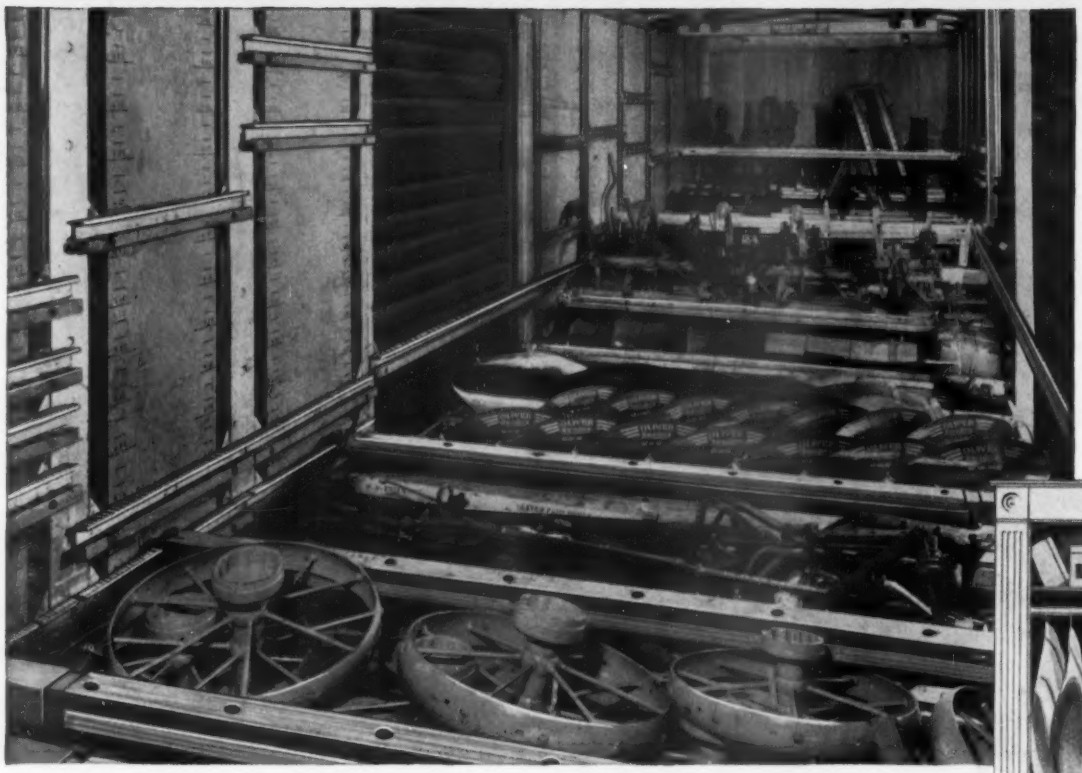
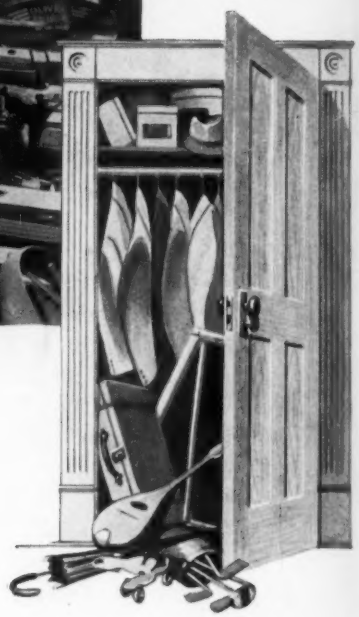
SEPTEMBER 29, 1945

Railway Age

Founded in 1856



EVANS DETROIT PLANT
FLIES ARMY-NAVY
"E" PENNANT



No More "HALL-CLOSET" Shipping With

GRIP-LOCKED LOADS!

Here is a load of miscellaneous farm equipment. Regardless of its shape, size or weight, each article is held against movement in transit. The general purpose Utility Loader *grips* the load . . . then *locks* the grip for safety. The Utility Loader is *modern* freight car equipment that carries shipments whole, undamaged, unmarred and immediately usable—as far ahead of old time freight shipments as an up-to-date filing system is ahead of the old hall closet "catch-all".

Write for a copy of the Evans Manual today. It illustrates the manifold advantages of general purpose Utility Loader grip-locked loads to shipper, carrier and consignee alike.

GRIPS *and* **LOCKS**
THE LOAD **THE GRIP**

UTILITY-LOADER

UL FOR THE GOOD OF THE RAILROADS

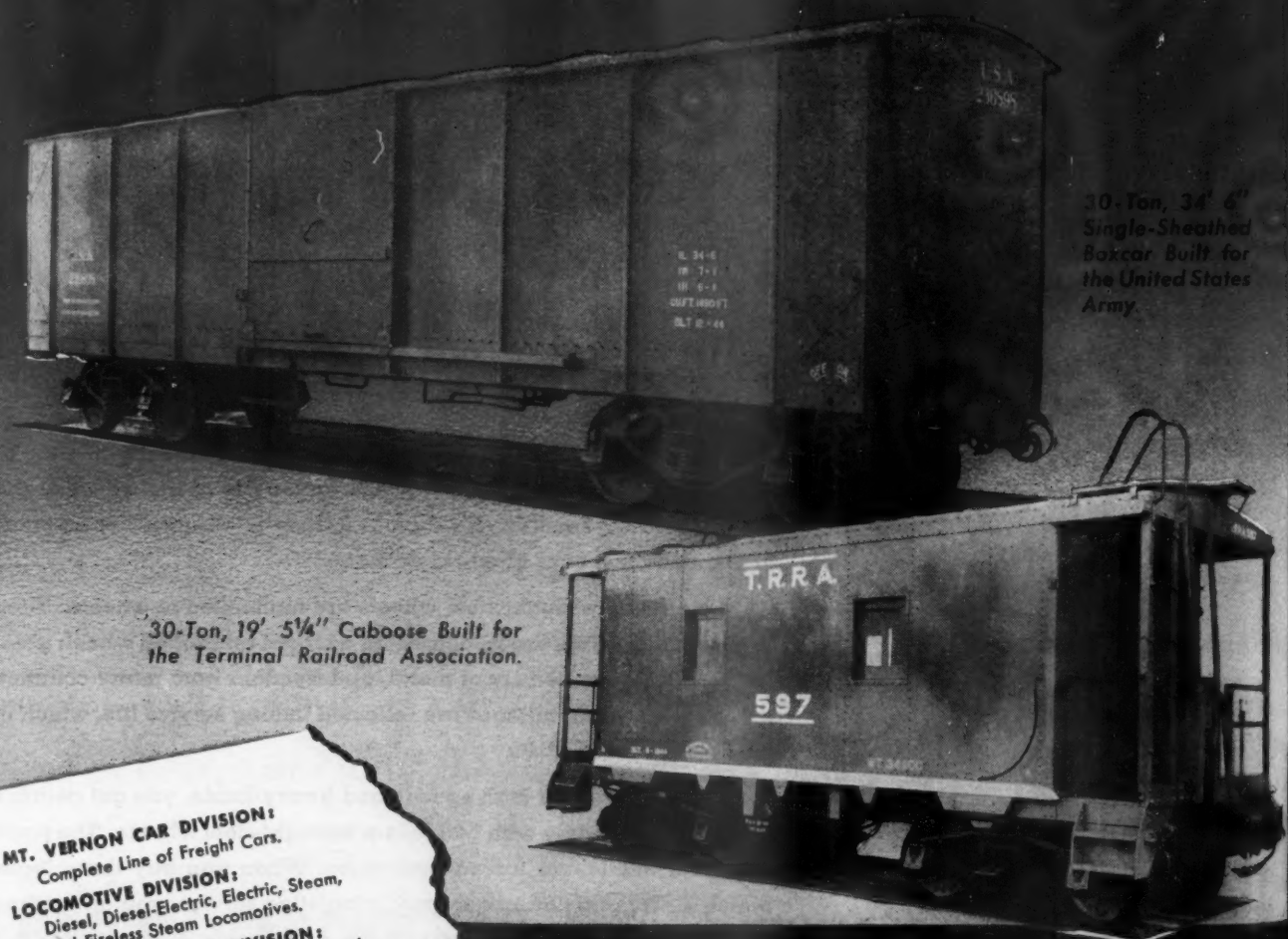
EVANS

EVANS PRODUCTS COMPANY
DETROIT 27, MICHIGAN

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933 at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 119, No. 13.

MT. VERNON CARS

in Production *Today*—
for Tomorrow's Traffic



30-Ton, 34' 6" Single-Sheathed Boxcar Built for the United States Army.

30-Ton, 19' 5¼" Caboose Built for the Terminal Railroad Association.

MT. VERNON CAR DIVISION:
Complete Line of Freight Cars.

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Rotex, Centrifugal, Chemical Pumps.

MT. VERNON

MT. VERNON,

Division of **H. K. PORTER**

Oliver Bldg., Pittsburgh
Chauncy Bldg., Boston
Walbridge Bldg., Buffalo
McCormick Bldg., Chicago
Carew Tower, Cincinnati
Book Bldg., Detroit

50-Ton, 50' 6" Steel Sheathed Automobile Box-car with End Doors and Auto Loaders.

50-Ton, 40' 6" Steel Sheathed Boxcar.

BUILDING FOR PEACE AS WELL AS FOR WAR

Railroad freight cars are one item of war production that will be just as useful in peace as in war...Typical of the modern cars being produced at Mt. Vernon are the four pictured here.

CAR MFG. CO.

ILLINOIS

COMPANY, Inc.

Petroleum Bldg., Los Angeles
340 Thomas St., Newark, N. J.
50 Church St., New York
Girard Trust Bldg., Philadelphia
Monadnock Bldg., San Francisco
1507 M St., N. W., Washington

MT. VERNON CARS

PORTER
Better Built
Equipment
Established 1866

How an Alco-G.E. survey started the S

ESTIMATED ANNUAL SAVINGS AFTER CONVERSION TO ALL DIESEL-ELECTRIC OPERATION

OPERATING COSTS*	Increase	Decrease
173,708 passenger locomotive-miles at $.5100 less cost per mile		$88,600
548,461 freight locomotive-miles at $.5997 less cost per mile		328,900
Total		417,500
Rent of steam engines		14,600
TAXES	$12,500	
Net increase		
DEPRECIATION	39,800	
Net increase		
ADDITIONAL ENGINEHOUSE EXPENSE		
2496 dispatchments at Jersey City at $4.25 less cost each		10,600
ELIMINATION OF 75 COAL CARS		
Depreciation at 2.83 per cent		5,300
Maintenance at $100 per year		7,500
MAINTENANCE OF WAYS AND STRUCTURES		
Elimination of steam-locomotive facilities		10,900
Improvements for diesel-electrics	3,100	
	$55,400	$466,400
SAVINGS**		$411,000
INVESTMENT—16 ALCO-G.E. DIESEL-ELECTRICS		$1,402,700
RETURN ON INVESTMENT		29.3%

*Based on actual results obtained with 8 Alco-G.E. diesel-electrics during 1941–1944 and calculated for a postwar traffic load equal to 1940.

**Also based on 1941–1944 costs. At 1940 costs the savings would be correspondingly less.

Total saving each year now amounting to more than one-quarter the cost of the diesel-electrics

In two easy steps, the New York, Susquehanna & Western has progressed from an all steam-locomotive road with operating costs of $1.14 per freight locomotive-mile to an all diesel-electric road with operating costs of 60 cents per freight locomotive-mile.

It started in 1941, when Alco-G.E., at the request of the Susquehanna, completed a motive-power survey of the road and showed that the installation of eight 1000-hp Alco-G.E. units would produce operating economies estimated at $130,000 a year—a 19.8 per-cent return on the cost of the eight locomotives.

In service, the diesel-electrics exceeded expectations. In 1943, it was possible to effect a 25 per-cent reduction in motive power and, at the same time, absorb the Susquehanna's 23 per-cent increase in traffic over that of 1942.

As a result of this highly satisfactory performance, the Susquehanna requested Alco-G.E. to make another survey in 1944, this time with the objective of releasing the balance of the Susquehanna's steamers, passenger as well as freight. Eight more 1000-hp Alco-G.E. units of the road-switcher type were purchased. The last one has just been delivered, making the Susquehanna the first all diesel-electric Class I road. The few steam locomotives temporarily retained will be retired as soon as present traffic peaks ease off.

On the basis of actual costs in 1943, the 16 diesel-electrics are slashing operating costs at the rate of $417,000 a year. In addition, the purchase of 75 coal cars to service steam locomotives has been made unnecessary. The savings in maintenance of way and structures, after allowance for new diesel-electric facilities, amount to more than $7000 a year.

An important factor in the initiation of this diesel-electric program was the motive-power study made by Alco-G.E. in 1941. It is one reason why the Susquehanna, with all diesel-electrics, is thoroughly prepared to handle postwar traffic most efficiently and economically.

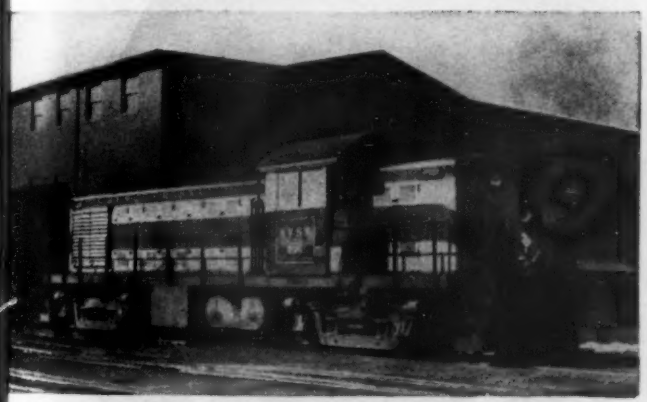
Alco GE

AMERICAN LOCOMOTIVE

Susquehanna toward $411,000 annual savings

20,000,000 PASSENGER-MILES a year are handled by the diesel-electrics at an operating cost of 49 cents per locomotive-mile as against $1.00 per locomotive-mile for steamers.

6575 HOURS OF YARD SERVICE a year are being performed by the diesel-electrics at savings of more than $20,000 a year compared with the operating cost of steamers.



113,000,000 FREIGHT TON-MILES (estimated for 1945) will be handled by the diesel-electrics at an operating cost of 60 cents per locomotive-mile, compared with $1.14 per locomotive-mile for steamers.

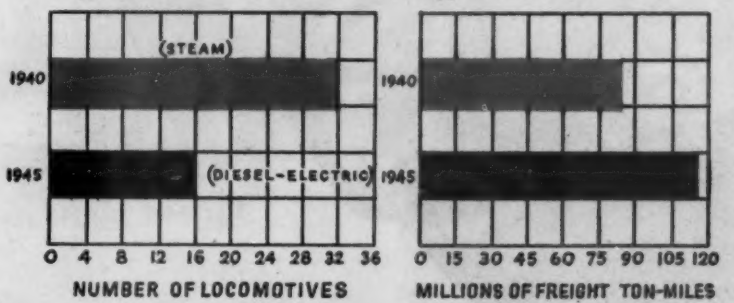
—"a commendable record" says ICC

"... We believe that some additional recognition should be given in the capital structure to the earning possibilities of this railroad. The debtor's trustee has made a commendable record in reducing the past and probable future operating expenses and in the development of traffic possibilities. Although the savings in operating expenses are not of themselves assurances of future traffic, we think that in the light of all the circumstances, including the possible savings through increases in the use of diesel-electric power, the conclusion of division 4 that the reorganized company's expectable earnings available for interest and other corporate purposes in a normal year are from $600,000 to $700,000, is somewhat too low. Upon further consideration we find that such earnings may be expected to range from $700,000 to $775,000. Under all the circumstances, we conclude that the amount of income bonds issuable at reorganization should be increased to $4,000,000 and that the amount of other securities should remain as approved in the prior report. Stating the 35,000 shares of common stock at $100 a share, the resulting capitalization will be $15,932,844. We will modify the plan accordingly."

—Excerpt from ICC Plan of Reorganization for NYS&W RR.

RESULTS OF SUSQUEHANNA'S CONVERSION TO ALL DIESEL-ELECTRIC OPERATION

50% FEWER LOCOMOTIVES DO——39% MORE WORK AT——————58% LOWER COST



Cost Per Mile (Actual, 1943)				
	Passenger Service		Freight Service	
	Steam	Diesel-electric	Steam	Diesel-electric
Repairs	$.3085	$.1265	$.3365	$.1365
Enginemen	.2349	.2441	.2805	.2856
Fuel	.3330	.0775	.3906	.0775
Water	.0291		.0291	
Lubricants	.0100	.0180	.0100	.0180
Other supplies	.0100	.0100	.0100	.0100
Enginehouse expense	.0812	.0116	.0812	.0116
	$1.0067	$.4967	$1.1379	$.5382
SAVINGS		$.5100		$.5997

----PRODUCING ANNUAL SAVINGS OF $411,000

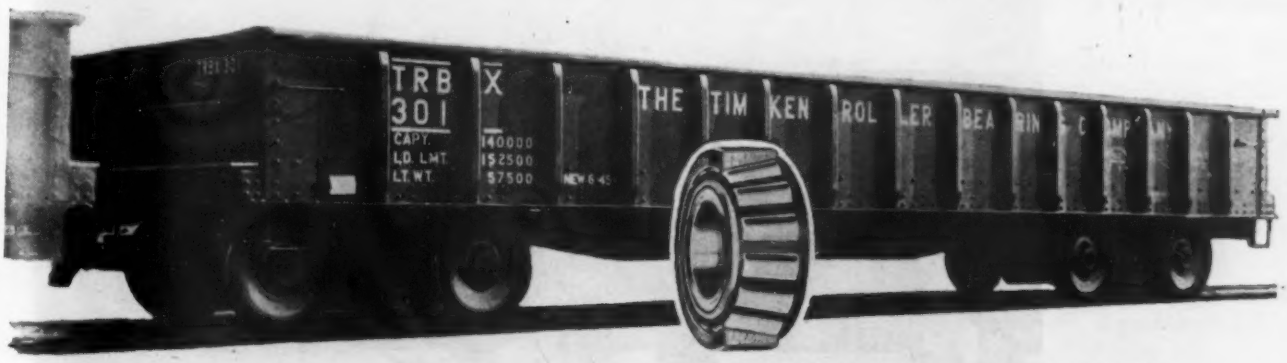
and GENERAL ELECTRIC

Edgewater DRAFT GEARS

POSITIVE RELEASE

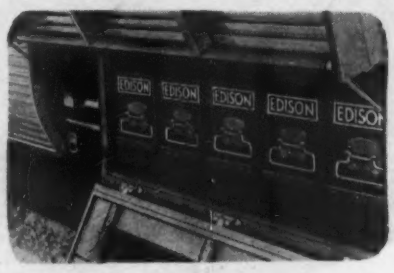
through EDGEWATER'S exclusive RING SPRING PRINCIPLE

In the B-32-KA draft gear, no auxiliary coil springs are required to release the friction elements after compression. The car-saving ring spring provides the friction to absorb shocks, and the force to return the gear promptly to full length, ready for the next blow.



NEW GONDOLA CAR EQUIPPED WITH TIMKEN INBOARD ROLLER BEARINGS AND EDGEWATER B-32-KA DRAFT GEARS built by American Car and Foundry Company in June, 1945.

Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y. Philadelphia, Penna. St. Louis, Mo. St. Paul, Minn. San Francisco, Calif. Seattle, Wash. Washington, D. C.



They Save Weight *where it counts most*

Use of Edison Alkaline Batteries is a proved way to provide the necessary standby power capacity with the least weight.

Not only are they the lightest weight type of battery available for railway-car service but they save weight where it counts most —near the middle of the car.

An outstanding reason for their light weight is their steel cell construction — a construction that gives alkaline batteries the further advantage of unequalled mechanical strength.

Alkaline batteries are equally suitable for use in 32-volt, 64-volt or 110-volt systems. They have been giving dependable service for many years in all three. *Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, New Jersey.*

Edison
THE LIGHTWEIGHT BATTERY
FOR LIGHTWEIGHT CARS

CHICAGO AND NORTH WESTERN SYSTEM

USES

HONEYWELL

DIESEL SHUTTER CONTROL

ON "400" FLEET

The C & N W "400" is one of America's first high speed daytime passenger trains, and is now celebrating its tenth anniversary. Operating between Chicago and the Twin Cities, it derives its name from the distance and time of its run — approximately 400 miles in 400 minutes.

Minneapolis-Honeywell has just completed installation of its shutter control system on nine diesel-electric locomotives of the Chicago & North Western Railway Co.'s "400" fleet. Because it maintains constant temperatures in the cooling system, this same shutter control system is successfully reducing operating costs and eliminating engine wear on diesel locomotives for many railroads, from coast to coast and from Canada to Mexico, under all types of operation and climates.

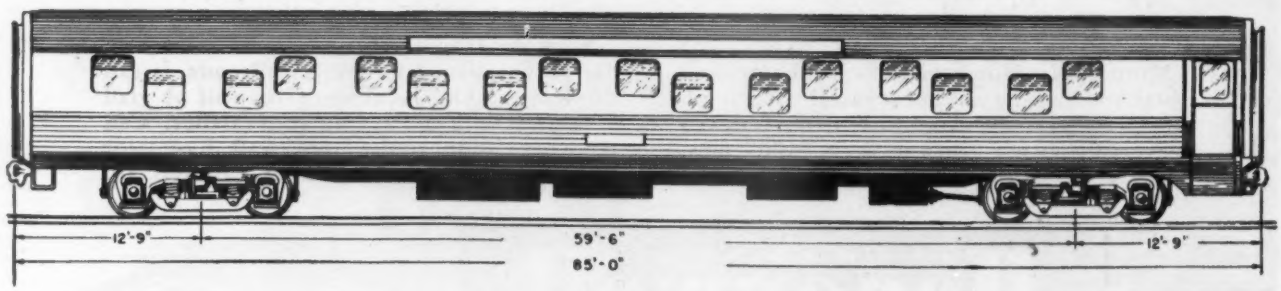
What the Honeywell shutter control system has accomplished for other railroads, it can do for you. Our representatives will be glad to consult with you at your convenience. Call or write Minneapolis-Honeywell Regulator Company, 435 East Erie Street, Chicago, Ill.

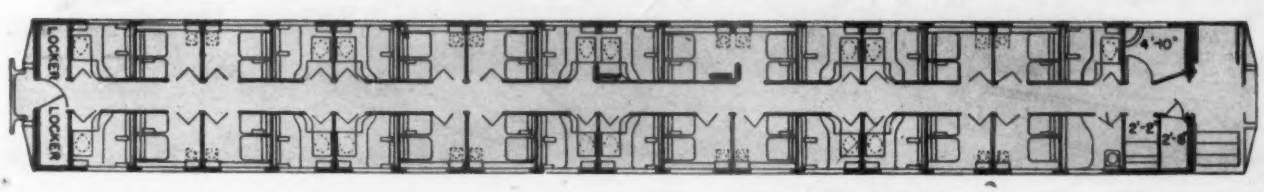
BUDD INTRODUCES

The Budgette is a triumph of compactness. Within the limits of a standard-size 85-foot car, by ingenious design, Budd has fitted private accommodations for 32 passengers. Each room has a comfortable seat by day; a full-length 6′3″ bed for sleeping. Each has its own toilet and lavatory, its own broad window, luggage rack, and other conveniences.

In this remarkable car Budd has answered the most insistent demand of passengers—the demand for privacy at moderate cost. At the same time it supplies an important need of railroads—for better and more salable accommodations with high capacity per car. There will be no more open berths.

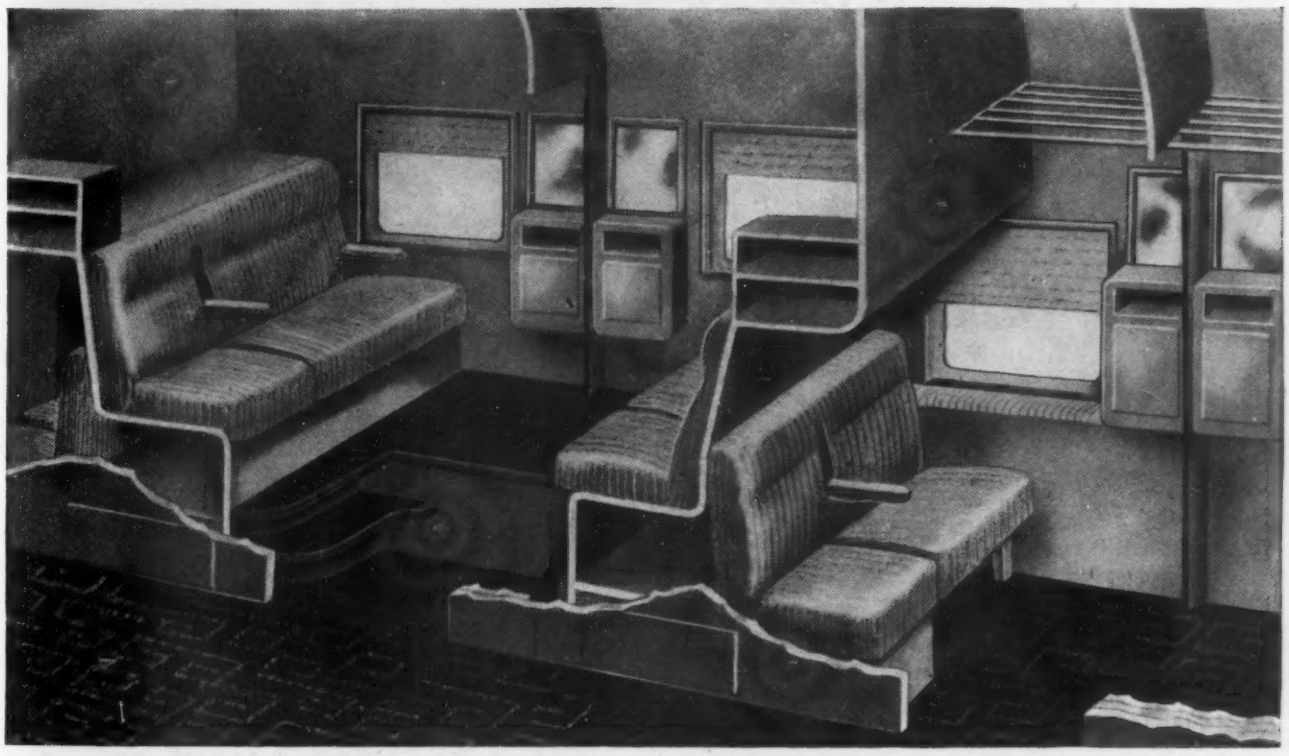
For railroads the Budgette spells opportunity—to encourage rail travel, to fill cars with paying passengers, to increase train revenue.





The Budgette

A SLEEPING CAR WITH 32 INDIVIDUAL PRIVATE ROOMS



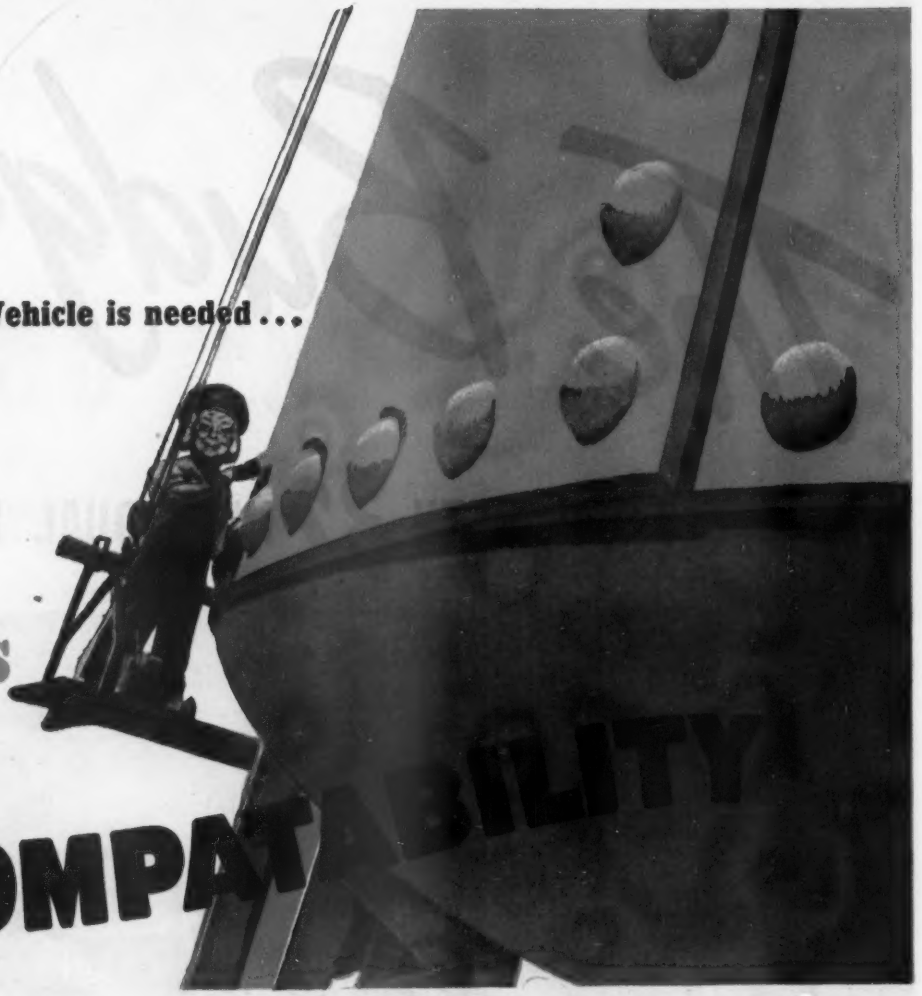
Unique feature of the Budgette is the arrangement by which two rooms may be made communicating by simply opening the partition between them.

All rooms are entered from the floor level of the car aisle. Seats and seat floor level of alternate pairs of rooms are on a slightly higher level, reached by two easy steps.

Porter service will be no problem on the Budgette. The compactly-stowed beds will be pre-made and can be drawn into position in a jiffy by the passenger or porter as desired, and without having to open the aisle door.

EDWARD G. BUDD MANUFACTURING COMPANY — Budd

PHILADELPHIA • DETROIT • CHICAGO • NEW YORK • ST. LOUIS • SAN FRANCISCO • WASHINGTON



No matter what Paint Vehicle is needed . . .

- SYNTHETIC RESINS
- NATURAL RESINS
- MODIFIED SYNTHETICS
- DRYING OILS

RED LEAD'S WIDE COMPATIBILITY

makes its Extra Rust Protection Available

The fact that Red Lead is generally accepted throughout industry as the standard metal protective paint indicates two things:

1. *That it must be widely adaptable to various service conditions.*
2. *That it must offer something* EXTRA *in the way of rust prevention.*

Red Lead's versatility is due principally to its compatability with the wide range of vehicles needed to answer present-day service demands. It can be used with practically every type of paint vehicle on the market—synthetic resins, natural resins, drying oils, and combinations of these.

Thus, paints for any metal protective purpose can be formulated with Red Lead. Since almost any paint vehicle can be used with Red Lead, a broad range of drying requirements can be met—anything from the normal drying primer used on structural steel to the quick-drying paint essential to present-day production schedules.

Why Red Lead means Extra Rust Protection

Red Lead has the property of counteracting acid conditions, recognized as accelerators of rust. In the presence of various acids, Red Lead forms insoluble lead salts at the approximate rate at which the acids are supplied.

This is true whether the acid originates from acid-forming environments, such as gas, smoke and moisture in the atmosphere, or from the decomposition of the vehicle. Thus, a rust-inhibiting condition is maintained with a Red Lead paint.

Red Lead also forms an adherent protective shield which prevents electrochemical action, another prime cause of rusting.

Specify RED LEAD for All Metal Protective Paints

The value of Red Lead as a rust preventive is most fully realized in a metal paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint.

No matter what price you pay, you'll get a better paint for surface protection of metal, if it contains Red Lead.

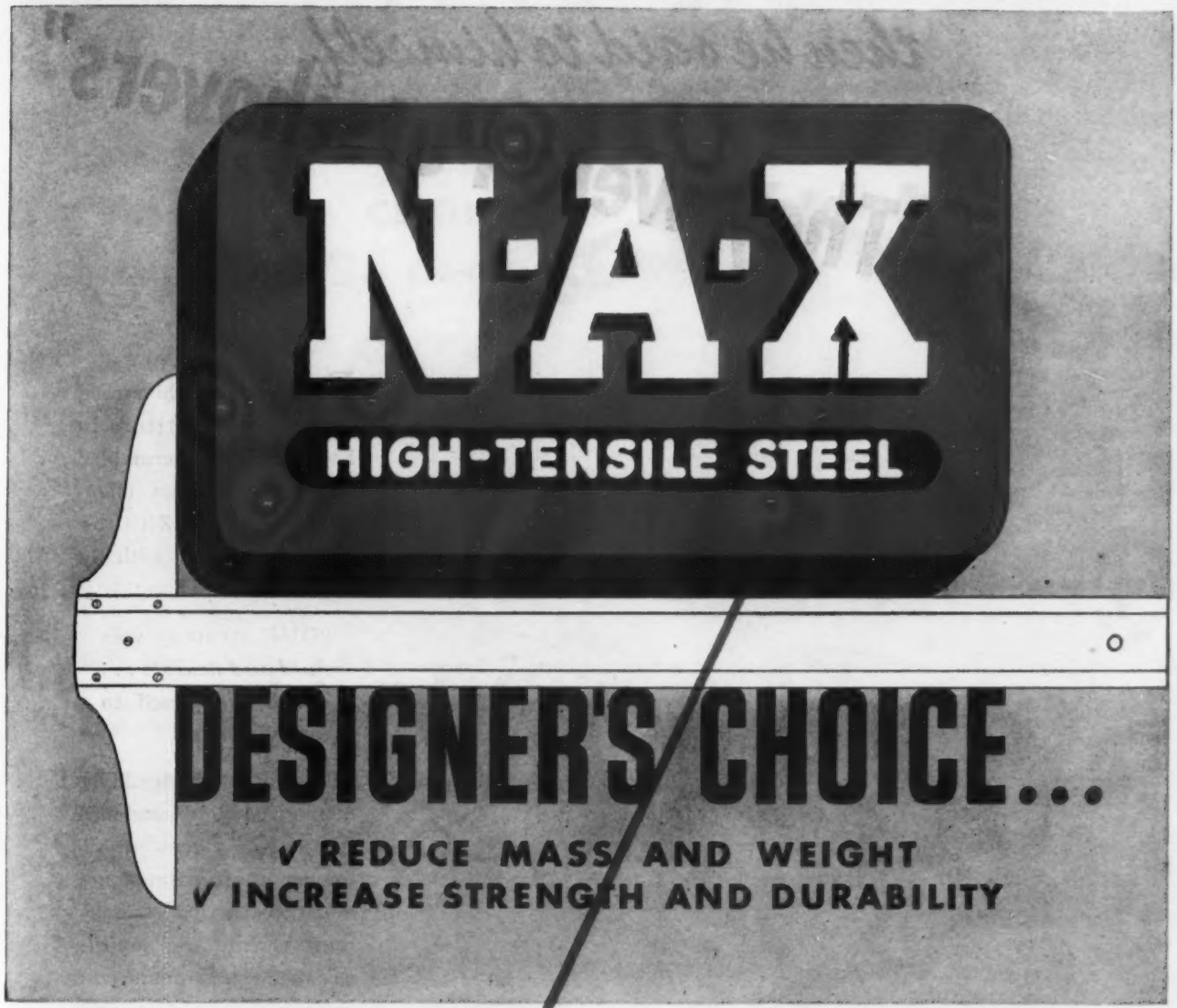
Write for New Booklet—"Red Lead in Corrosion Resistant Paints" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas—ranging from Red Lead-Linseed Oil paints to Red Lead-Mixed Pigment-Varnish types. If you haven't received your copy, address nearest branch listed below.

* * *

All types of metal protective paints are constantly being tested at National Lead's many proving grounds. The benefit of our extensive experience with paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St. Louis 1, San Francisco 10, Boston 6 (National-Boston Lead Co.); Pittsburgh 30 (National Lead & Oil Co. of Penna.); Philadelphia 7 (John T. Lewis & Bros. Co.); Charleston, W. Va. (Evans Lead Division).

DUTCH BOY RED LEAD



By taking advantage of the high inherent properties of N-A-X HIGH-TENSILE steel—great strength and toughness, exceptional formability, outstanding resistance to impact and fatigue, with good weldability and resistance to corrosion—manufacturers can have their choice of two fundamental improvements in product design:

1 Where reduction of weight means efficiency, lighter sections of N-A-X HIGH-TENSILE steel can be used without sacrifice of strength. Its high properties take the place of mass.

2 Where increased strength and life characteristics are desirable, the use of N-A-X HIGH-TENSILE steel in the same sections will provide a stronger, tougher, longer-lasting product.

Certainly these demonstrable advantages are worthy of your consideration in the conquest of postwar markets.

GREAT STEEL FROM GREAT LAKES

GREAT LAKES STEEL
Corporation
N-A-X ALLOY DIVISION • DETROIT 18, MICHIGAN
UNIT OF NATIONAL STEEL CORPORATION

then he said to himself

"They were Putschovers"

Being asked why his strong German competitors in Eastern Europe crumbled under the Russian offensive, General Zhukov crashed through with 12 words that will live:

> "OUR strategy was *fluid and flexible* . . . THEY were used to easy victories."

That statement should be memorized by railroad men to serve as a constant reminder that maintenance and construction strategy must be *fluid and flexible* to assure maximum cost savings.

"Fluid and Flexible"... *he says*

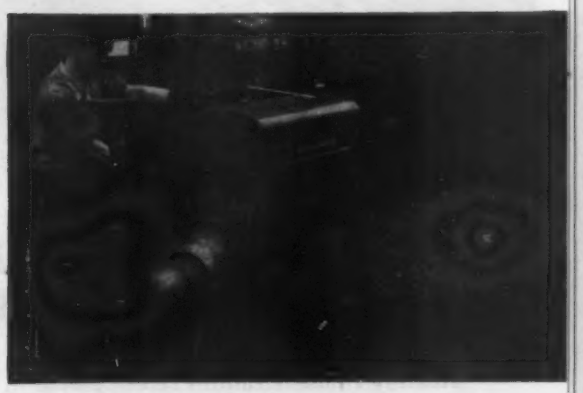
THAT, ZHUKOV, is also the battle cry of railroad executives looking for ways to save time and money on "hot spot" repairs.

COOLS OFF "HOT SPOT"...
Saves $20.25 per head block with Arc Welding

1 Jack up car for proper fit-up of crack in head block casting.

2 Weld crack in casting with 3/16" "Fleetweld 5" electrode.

3 Lower jack. Send car to destination. *SAVING:* Former replacement cost $21.00. Arc welding repair costs 75¢. *SAVES* $20.25.



4 *THE COST CUTTER* . . . Lincoln 200-amp Engine Driven Welder with pneumatic tir running gear . . . the tool to get you out of "ho spots" quick! Full details in Bul. 312-C.

This application is in the interchange point ("hot spot") of a large Eastern railroad. Call the Lincoln engineer nearby to help speed up your "hot spot" operations and solve other maintenance and construction problems.

THE LINCOLN ELECTRIC COMPANY • DEPT. B-2 • CLEVELAND 1, OHIO
THE LINCOLN ELECTRIC RAILWAY SALES CO. • Railroad Representative • Cleveland 13, Ohio

America's greatest natural **recourse**

ARC WELDING

Ad No. 178-G

Now! Comco FM Radio for Railroads

"Solid" Communications Up to 20 Miles Proved by Tests

Up to 20 miles . . . and extremely "*solid*," too! That's Comco's amazing communications record *proved* in months of exhaustive tests. Think of it! Comco permits instant two-way communications train-to-tower, train-to-train, and engine-to-caboose . . . while the *train rolls along!*

Up-to-the-minute reports transmitted . . . last minute instructions received . . . without time-wasting stops. Easy communications between yard master and train crews. Less rolling stock needed. Hours saved in running time. Notably *safer,* more dependable service for traveler and shipper. All are now a Comco reality . . . an accomplished *fact!*

Ever striving to excel . . . always taking time to do things better . . . the name Comco, already great in the realm of electronics, is now destined to be equally great on the railroads of America.

WRITE! *Just a note on your company letterhead outlining your exact requirements. We'll give you the benefit of our specialized experience.*

Customized FOR DEPENDABLE PERFORMANCE

FM Transmitter and Receiver

A crystal controlled VHF transmitter and receiver for operation on 152-162 Mc. Units available in 15, 25 or 50 watts. An 18-inch antenna provides adequate clearance.

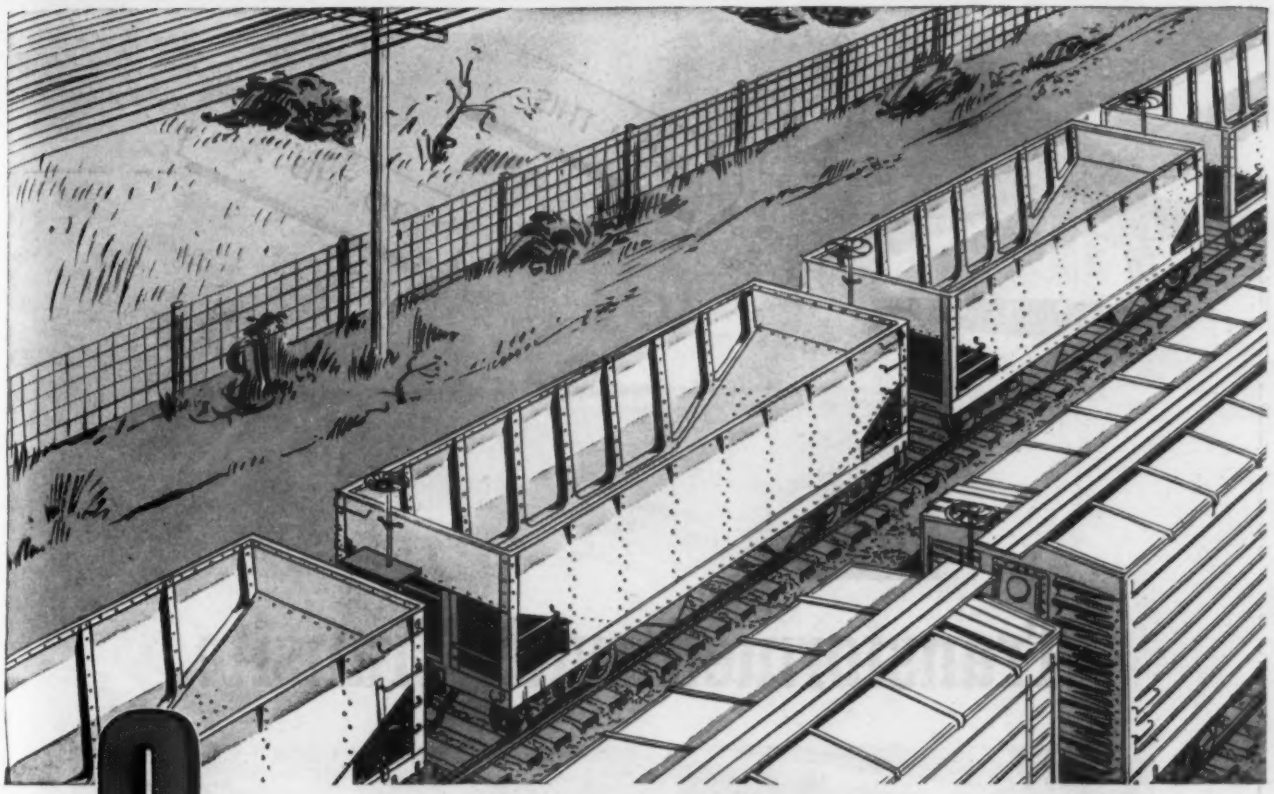
Tropicalized components and extra rugged *Customized* construction mean long, trouble-free operation.

Ease of installation and maintenance are also outstanding features. Original installation can be made in 30 minutes. Defective units can be replaced in 5 minutes. All with non-technical personnel.

MANUFACTURERS OF RADIO COMCO & ELECTRONIC EQUIPMENT

COMMUNICATIONS COMPANY, Inc.

CORAL GABLES 34, FLORIDA



3 HIGH STRENGTH STEELS TO HELP YOU

Save Weight with Safety

REPUBLIC ALDECOR

The latest development in high strength steels — the result of experience gained in ten years of high strength steel production and application—and possessing superior welding and forming characteristics.

REPUBLIC COR-TEN

Now celebrating the tenth anniversary of equipment made from it, COR-TEN has proved itself to be a dependable weight-reducing material for all types of railroad rolling stock.

REPUBLIC DOUBLE STRENGTH

A low-cost, high strength steel which for the past 10 years also has been widely used to cut dead-weight while maintaining strength and safety of railroad equipment.

There's no revenue in equipment dead-weight — especially when that dead-weight represents lost pay load which could be carried without increase in operating overhead.

That's why Republic offers you your choice of three different high strength steels to use in substituting greater pay load capacity for excess dead-weight in building new freight and passenger equipment.

While all three of these steels possess similar physical and performance values, certain basic differences do exist which may make one, more than either of the others, better suited to meet certain application requirements.

Taken as a group, Republic ALDECOR, Republic COR-TEN and Republic DOUBLE STRENGTH provide a minimum yield strength of 50,000 pounds per square inch . . . are resistant to rust and corrosion . . . and are equal in abrasion resistance to carbon steels of like physical properties. All are produced in bars, plates, sheets and strip.

To assist you in determining which of these high strength steels is best adapted to your particular needs, Republic's experienced metallurgical staff is ready to work with you NOW. Write directly to:

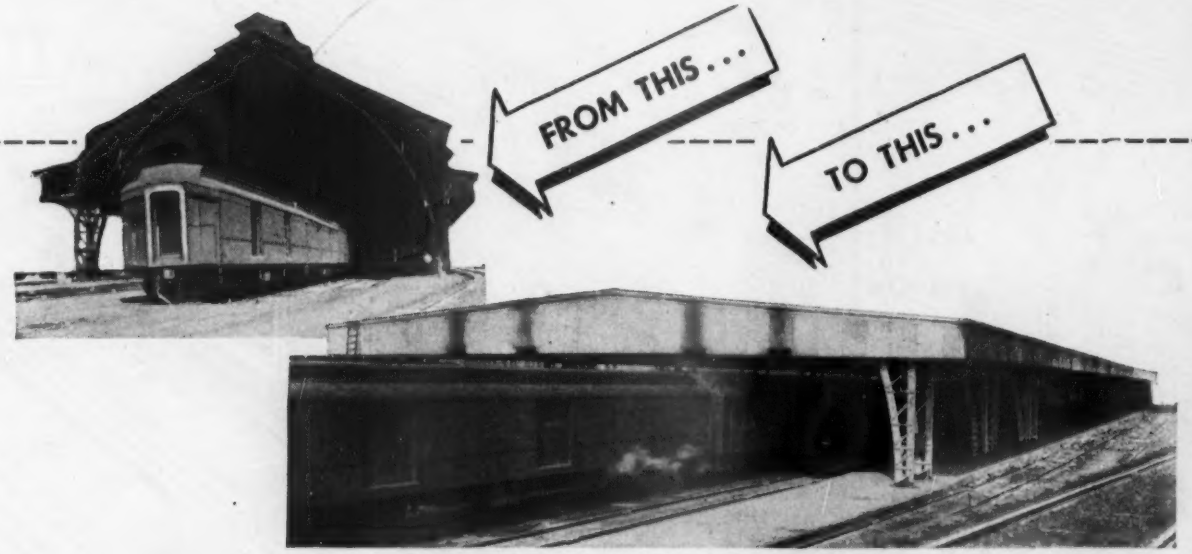
REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Republic

HIGH STRENGTH STEELS

ALDECOR • COR-TEN • DOUBLE STRENGTH

Other Republic Products include Carbon, Alloy and Stainless Steels — Sheets — Plates — Pipe — Bars — Wire — Bolts, Nuts and Rivets



Transformed with Transite

MODERNIZED WITH J-M ASBESTOS. Corrugated Transite for the sides, roof deck and smoke slots. Transite "S" Pipe for the flashing cap over the smoke slots.

AT A GLANCE you can see the great change in the general appearance of this modernized Central Station train shed of the Illinois Central, at Chicago.

But of equal importance, though invisible to the camera, is the freedom from rust, rot and corrosion, as well as the protection against fire which J-M Asbestos Transite materials bring to the job.

Siding, roof deck and smoke slots are constructed of J-M Corrugated Transite. Made of asbestos and cement, this Transite material eliminates the need for preservative treatment even when exposed to severe weather and operating conditions.

For further information, write Johns-Manville at New York, Chicago, Cleveland, St. Louis or San Francisco.

Johns-Manville

87 YEARS OF SERVICE TO TRANSPORTATION

JOHNS-MANVILLE JM PRODUCTS

More than a dozen points of attachment are provided by this Alcoa Aluminum forging. Its use avoids high labor costs and manufacturing hazards, entailed in building up a part for the same task. A maximum saving in weight is achieved.

All of the usual advantages gained with Alcoa Aluminum are retained—strength, lightness, corrosion resistance and dependability.

Intricate parts, surprisingly large in size, are possible in Alcoa Aluminum forgings. Alcoa engineers, skilled in their design and production, will gladly assist in adapting aluminum forgings to your products. ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania.

FIRST IN

ALCOA ALUMINUM

ALCOA

RAIL
CR
TRA
ST
ON
SIGN

ISYLVANIA

RAILWAY ACE

NOW WE HAVE A JOB TO DO FOR HIM!

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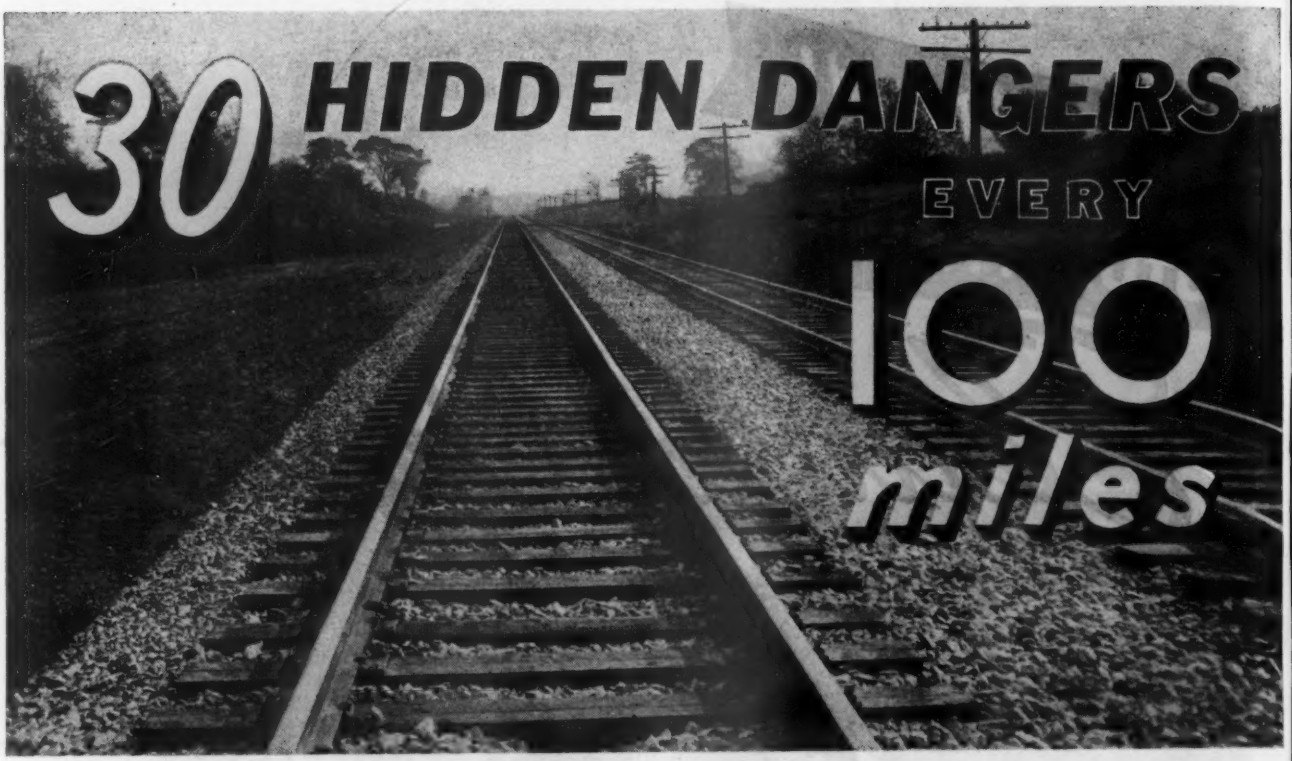

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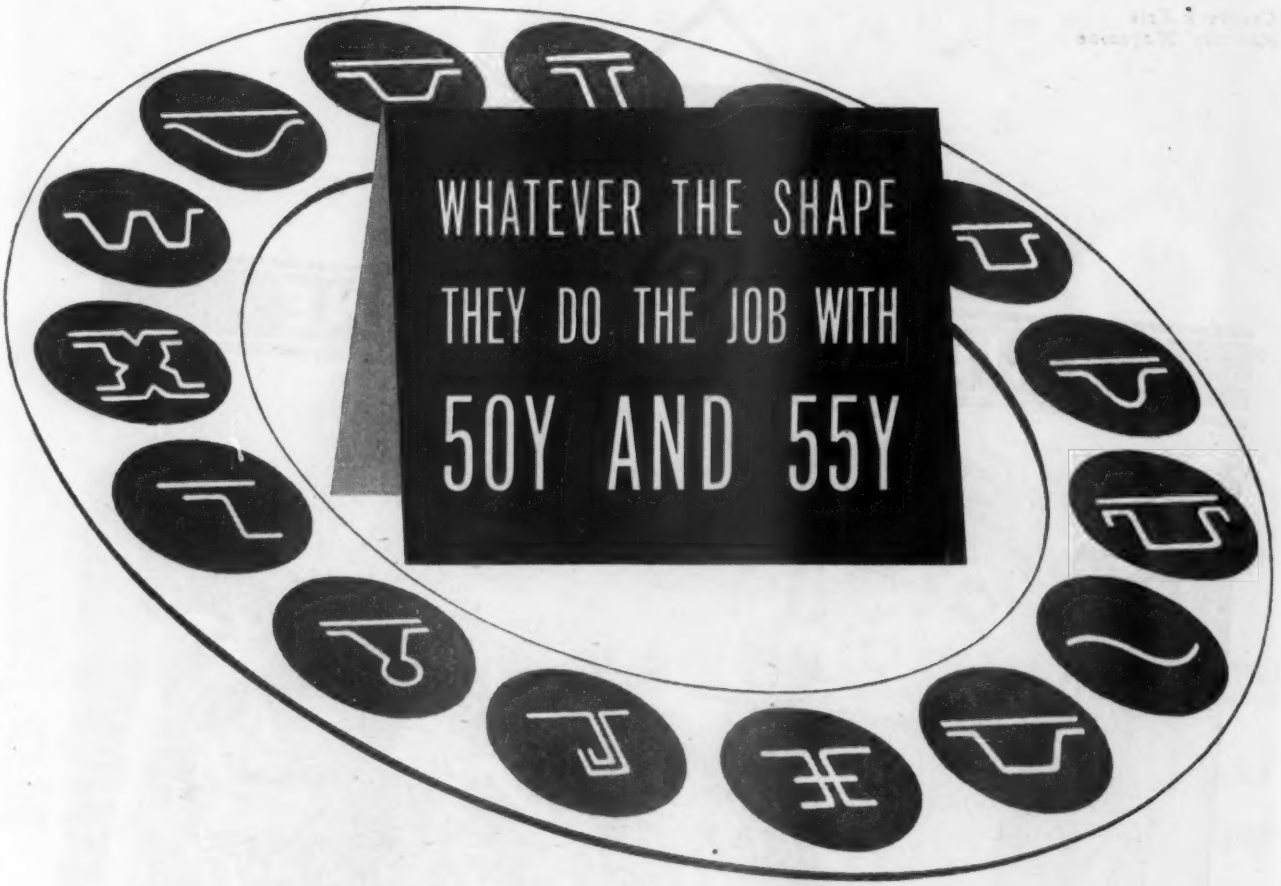

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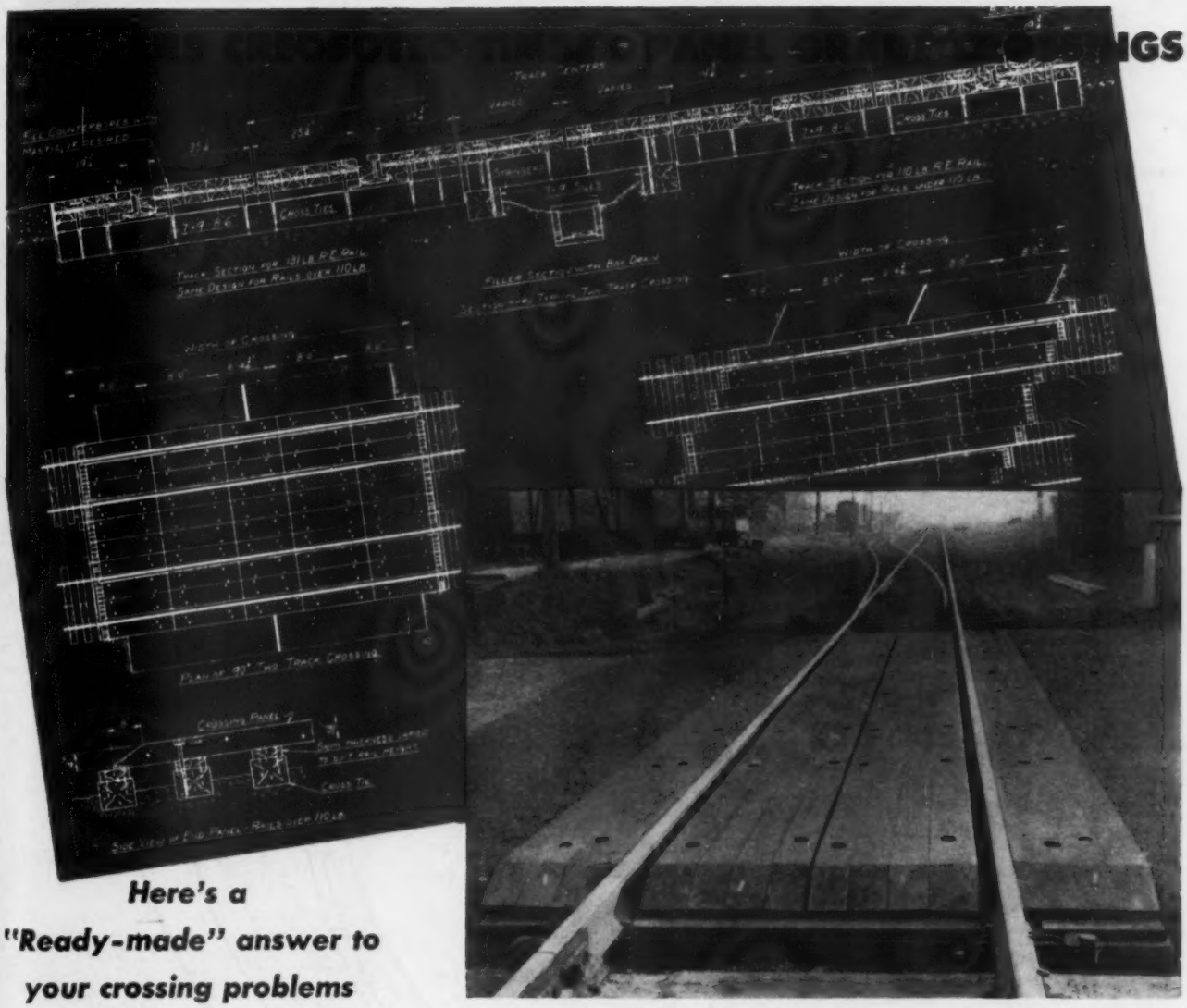

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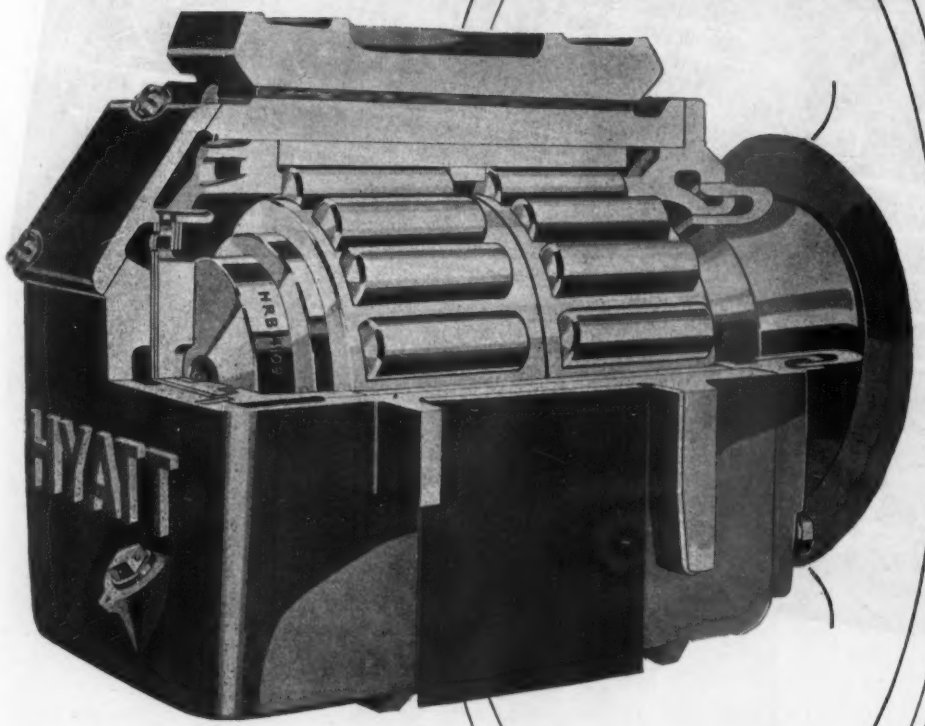

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In This Issue

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The Week at a Glance

POOR YARD PERFORMANCE: The Superintendents' Association didn't meet this year, of course, but its committees prepared their usual reports for the edification of the membership—and these are reviewed in an article in this issue entitled "Grappling with Operating Problems." One such problem which is grappled with is that of expediting yard operations, and the committee believes it will stand considerable grappling since "less has been accomplished in improved yard operation than in any other field of railroad endeavor." The subcommittee on yard facilities proffers many specific suggestions as to what is needed from the engineering and equipment maintenance departments, and other subcommittees tenders parallel hints on yard motive power, clerical practices and supervision.

●

OPERATING PERSONNEL: The superintendents have some significant things to say about the treatment of employees—with the viewpoint that a supervisor has an important duty as a "two-way interpreter," explaining the employees' attitude to management as well as vice versa. A principal test of a superintendent's efficiency is the capacity of the men he selects for advancement; a superior who stands in the way of promotion for talented juniors undermines the morale of the division. In yard service, competent supervision is recognized as especially important, not only to assure that each job is done well but also to provide for careful selection and adequate training of employees. Forthright dealing with labor organizations is advised —without resort to "sharp practice to defeat the intent of contractual agreements." To which last bit of guidance it might be added that such practice is a principal source of demands for further restrictive rules.

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DIVISION STATISTICS: One of the Superintendents' Association committees goes into the matter of figures. For one thing, it warns that no statistical index has been devised which will tell what is actually happening on a railroad as accurately as actually seeing the performance; and that "changes in the efficiency index may be the result of changed traffic conditions" rather than changes in operating efficiency. Also on the question of figures, these practical operating men find that centralized accounting usually comes along too late with division statistics to afford much assistance to supervision; and they recommend that this deficiency be corrected by employing a division statistician to give the superintendent the information he really needs to do a close job of supervision. They list the figures they believe the superintendent needs.

●

MILWAUKEE BOYS IN KASSEL: The 757th Railway Shop Battalion, sponsored by the C. M. St. P. & P., has for some months been in charge of the great Henschel & Sohn Locomotive Works at Kassel, Germany; and some clear photographs portraying the operation are reproduced as a feature article in this issue. These photographs are a selection from a large number taken by Lt. Col. John W. Moe, who commands the 757th, and are made available to *Railway Age* readers through his kindness. The plant was badly bombed, but not sufficiently to prevent American ingenunity and hard work from restoring it to some degree of production, with the aid of some of the plant's regular employees who, whatever their political infirmities, give evidence of being both capable and industrious mechanics.

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ALTON-G. M. & O. MERGER: The I. C. C.'s report approving the merger of the Alton with the Gulf, Mobile & Ohio—involving the financial reorganization of the former company—is reviewed in an article in this issue, with a map showing the enlarged G. M. & O. system. The capitalization of the Alton and its lessor lines has been a little more than $89 million, and the added capitalization of the G. M. & O. in absorbing this property will be less than $41 million. The Alton, as the saying goes, is going through the wringer. The I. C. C. is persuaded, however—as apparently are Alton security holders—that the amalgamation will enable Alton properties to earn more than if they continued an isolated existence; and more securely than if the road was merely controlled by a larger system, rather than wholly absorbed. The Alton has been the bride in several alliances which proved to be of temporary duration but this one ought to last.

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AB BRAKE ORDER: The Interstate Commerce Commission has given the railroads until the end of 1948 to complete the installation of improved power brakes on all freight cars. Up to the end of May, this year, 118,000 cars had been so equipped and the I. C. C. figures that all facilities for installation will have to be utilized if its dead-line is to be met. For example, the Commission wants roads which are ahead of schedule with their AB installation program to lend assistance to carriers who are behind.

●

BRYANISM IN MODERN DRESS: Economic mountebanks of 50 years ago tried to put over on the populace the "free silver" scheme of governmental manipulation of the economy, designed to cut the value of the dollar in half, and thus "promote prosperity" by relieving debtors of half of their debts at their creditors' expense. Now we have a "full employment" bill, rigid control of profits and coercive boosting of wages—once more a scheme to make business hum by governmental intervention to "rob selected Peter to pay for collective Paul." The parallel between the temptations tendered to the electorate in the '90's with those dangled before them today is outlined in the leading editorial herein. Then, as now, many so-called "intellectuals" and some business men were in the camp of the political interventionists; but, that time, the common moral sense of the citizenry was sufficiently aroused to reject the blandishments of the demagogues, and the nation entered forthwith into three decades of unparalleled prosperity and growth.

MAJOR GENERAL GRAY: Carl R. Gray, Jr., director general of the Military Railway Service in Europe and heretofore a brigadier general, has been nominated and confirmed for promotion to major general, a rank not often attained by civilians temporarily in active military service.

●

CAVEAT FROM CONN: Donald Conn, executive vice-president of the Transportation Association of America, this week warned the Traffic Club of New York that continuance of the prevalent chaos in government dealing with transportation would result in failure of private investors to finance this industry—thereby necessitating government support and socialization. The country's Reds, he said, do not have to come out in the open and champion socialism. All they have to do is to sit quietly by while chaotic government policies, reflecting chaotic business opinion, proceed to ruin transportation as self-supporting free enterprise.

●

GOVT. REORGANIZATION: The Manasco bill, which would authorize the President to consolidate and otherwise shuffle administrative agencies in the interest of eliminating overlapping functions, has been reported to the House, with the I. C. C. exempt from tampering at the hands of the executive. The President could, however, if he were so minded, transfer other agencies of government to the I. C. C.—for instance, the Civil Aeronautics Board and the Maritime Commission. The report in our news pages recalls that, at one time, Mr. Truman indicated his belief that all transportation should be treated equally by government, and be regulated by one commission.

●

G. C. T. GETS NEW "SKY": Grand Central Terminal at New York has a new and resplendent ceiling, reproducing heavenly constellations—at the expense of a lot of labor and ingenuity in performing this rejuvenation at 120 ft. above the floor level, without scaffolding to interfere with busy station operations. An illustrated article herein describes this unusual job, which was done with suspended scaffolding. Before a new "sky" was applied, all plaster was covered with Flexboard. It took some experimenting with paint to get the mixture best suited to the task.

●

COSTLY INVENTIONS: Innovations in methods and machinery have a negative aspect, seldom considered, in the capital invested in older processes which is wiped out when improvements are introduced. Under competitive capitalism, such losses of existing investments are not permitted to stand in the way of progress, but under monopolistic socialism the vested interest in the *status quo* is much stronger. Hence, as an editorial herein points out, competitive capitalism must invariably excel socialism in the speed of its technological advancement. But capitalism can make mistakes, too, in gauging the probable economic effect of inventions, and our editorial mentions a couple which have been made, or seem about to occur.

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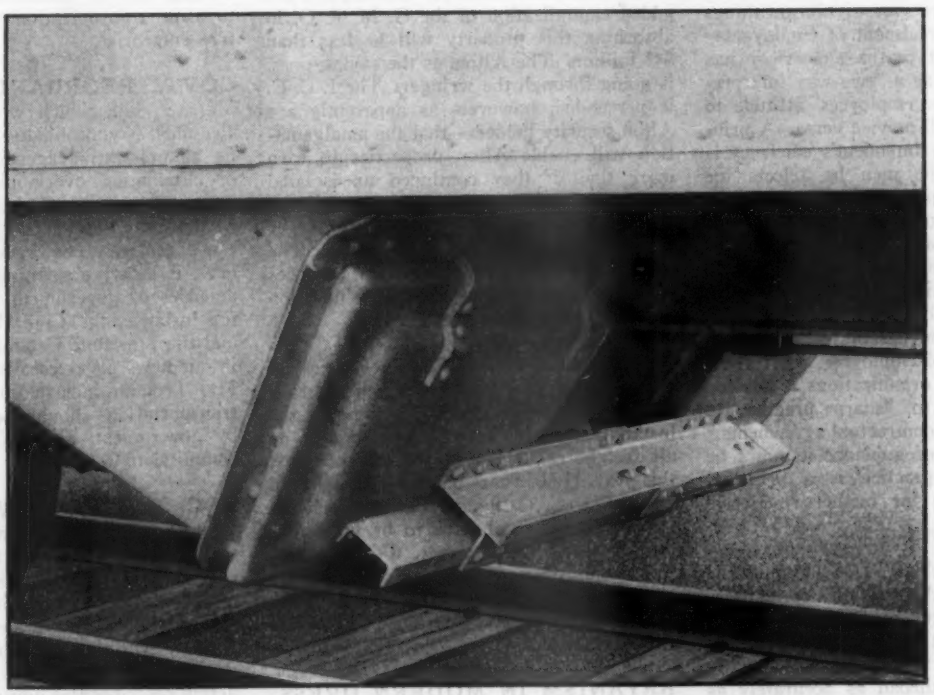

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RAILWAY AGE

Economic Quackery Fifty Years Ago and Now

Those old enough to remember, or who have studied the nation's political and economic history, are forcibly reminded by what is occurring now of what was occurring in this country fifty years ago. Following the panic in 1893 the world for a few years was in the trough of depression; and in this country, as now, various kinds of governmental intervention were advocated.

The principal measure then promoted as a cure for all economic ills was "free coinage of silver" at a ratio to gold of 16 to 1, just as the principal measure now promoted as a preventive of such ills is "budgeting" by government of enough total private and public spending to assure "full employment" and "adequate purchasing power." The means by which "free silver" would have worked its miracles would have been *reduction of the value of the dollar one-half* and corresponding inflation—i.e., doubling of prices and, in effect, reduction of everybody's debts one-half. The doubling of prices would have, of course, reduced the purchasing power of labor's wages 50 per cent. Also, the reduction of everybody's *debts* 50 per cent would have deprived *creditors* of all that was gained by *debtors*.

"Intellectuals" in the "Free Silver" Camp

This seems fifty years later an extraordinary plan to have been promoted for terminating depression. It was opposed by all believers in "orthodox" economics on the ground that its adoption would deepen and indefinitely prolong the depression. But it was strongly supported by the radical leaders of the time, including many "intellectuals," and even by many business men. Its main attraction was that it would, in effect, reduce debts. Those who had borrowed, it was contended, were the productive class, while those from whom they had borrowed were "idle rich" who lived by lending their capital instead of using it in production. Hence, it was argued, the reduction of debts would increase the opportunity and stimulate the enterprise of the real producing class. But the people decided not to "rob selected Peter to pay for collective Paul." "Orthodox" views of economics prevailed, "free silver" was defeated and the nation entered a period of increasing production and high employment which lasted more than thirty years.

The analogy between what was occurring in the late '90s and what is occurring now is plain. Believers in "orthodox" economics again are opposing proposed legislation which disregards all experience in this country—legislation which assumes that private enterprise cannot or will not in future, if afforded freedom and opportunity, cause high level employment and production. The radicals of our time, on the other hand, including many "intellectuals," and even some business men, are contending that free private enterprise cannot be depended on, and that, to assure high level employment and production, (1) private enterprise must be subjected to numerous controls as respects such matters as the hours it shall have its employees work, the wages it shall pay, and the profits it shall make, and (2) the expenditures of private enterprise must be supplemented by huge government expenditures on whatever kinds of projects, productive or unproductive, needed or not, that politicians and government bureaucrats may select.

The analogy between what was occurring in the late '90s and what is occurring now, however, is not complete. "Free silver" was advocated to remedy a depression which still prevailed. So-called "full employment" legislation is being advocated now when the great depression is five years behind us and to prevent a return to depression when almost every condition excepting the socialistic legislation threatened seems favorable to a period of high level employment and production. And, paradoxical as the inconsistency may seem, the depreciation of the dollar by the adoption of "free silver" was advocated by economic illiterates in spite of the plain fact that it would have *reduced the purchasing power of labor's wages,* whereas the socialistic legislation now threatened is being promoted by economic illiterates ostensibly to *maintain and increase labor's purchasing power!*

Demagoguery Always Has the Wrong Answers

The adoption of "free silver" would have had ruinous effects from which the nation would not have recovered for many years. It was supported by many apparently intelligent people because actually they were ignorant of economics or because they wanted their debts reduced, regardless of the effect on their creditors. The adoption of proposed socialistic "full employment" and "purchasing power" legislation would have ruinous effects from which the nation might never recover. And, like "free silver" fifty years ago, it is being supported by many apparently intelligent people because actually they are ignorant of economics or because they believe they will be the political or economic beneficiaries of policies calculated to "rob selected Peter to pay for collective Paul."

Track Maintenance Labor

While industries widespread over the country are laying off thousands of employees as the result of the end of the war, signaling the end of labor shortages in these industries and in many others long in need of manpower, the labor shortage on the railways, and especially in their roadway departments, still continues, and may well present a difficult problem for months to come. Short thousands of trackmen throughout the entire war period, in spite of the employment of some 20,000 to 30,000 high school boys during the last two summers, and from 6,000 to more than 60,000 imported Mexicans during the past two years, they must now give up all of their imported Mexican labor within the next six months, in spite of the fact that they have recently lost practically all of their boy laborers with the opening of schools, and are short large numbers of workers in many parts of the country.

Loss of the Mexicans is being required under orders of the War Manpower Commission, which, effective August 20, suspended further recruitments in Mexico, stopped all contract renewals, and set up a schedule which will see all Mexican railroad workers out of the country by the end of February next. For some roads, particularly those in the western part of the country which have had to rely so extensively on this type of labor, this upset in their labor supplies—large numbers of unemployed industrial war workers to the contrary—may prove serious.

Unlike most war industries, the job of the railways was not completed with the coming of V-J Day. The need for transportation of the armed forces, and of industry as it converts to peace-time production, goes on, allowing no let-up for the track forces if this traffic is to be carried safely and expeditiously, especially in view of the war-time deferred track maintenance on nearly all roads of the country.

The importation and employment of Mexicans by the railroads was the salvation of many roads throughout the war period. No one expected that these workers from the south would stay indefinitely after the end of the war, but the haste with which the roads are being forced to give them up may prove a serious mistake. Many roads pleaded with the W. M. C. for a limited extension of their services, at least through the remaining months of the present working season, but the government, while finding it convenient or expedient to retain many other war-time measures and controls in effect, held that, even if it desired, it could not extend the tenure of Mexican workers now that the war is over. Organized labor was an influential factor in the hasty decision, contending that lay-offs from war industries will bridge the gap. However, displaced war workers are showing little disposition to flock to peace-time pursuits in any industry necessarily paying less than war-time inflationary wage rates, and especially to work on the tracks, often in sparsely settled parts of the country calling for railroad camp life.

Eventually, no doubt, the situation will adjust itself. After searching unsuccessfully for jobs with wages beyond those for which they are qualified, many displaced war-workers will undoubtedly be glad to settle down to a steady, honest and responsible job on the track. In the meantime, as one chief maintenance officer has put it, overcoming long-deferred track work and many of our plans for improvements in track standards and maintenance, looking to improved railway service, will have to wait. If this proves to be true, the effects on total employment and on industry generally, as well as on the railroads, will be adverse.

Invention and Economics

Laymen's predictions, and even those of scientists, as to the industrial and economic changes likely to flow from a noteworthy innovation in technology frequently turn out to be wide of the mark. Our readers' guess is certainly as good as our own as to the ultimate effect on industrial practices and economic geography of the discovery of means to release the energy of the atom, for either constructive or destructive purposes. One of the most plausible possibilities seems to be the discouragement of further concentration of production in large cities—but that effect might develop anyhow from the lessons learned from ordinary bombing operations. Other things being equal, it would appear that, hereafter, industrial plants might tend to seek locations to minimize rather than maximize the ease with which they can be attacked from the air.

Such a shift of industry from urban concentration, if it should occur, would probably entail few disturbing consequences, provided it came about gradually. If the threat of further war should hover over the country, however, the shift might come swiftly—bringing a rapid decline in urban capital and property values. Such a development might run up a large bill of economic loss, possibly more than offsetting any economic gains to be expected in the early future from industrial applications of atomic energy. Under such circumstances, what has been an astounding scientific achievement might well turn into a net social and economic loss of colossal proportions. It is idle to prejudge what will actually happen, but it is not idle to keep alert for clues as to what *is* happening, when it begins; because, whatever changes do occur are certain to bear significantly on the railroads—from the standpoints of power, of traffic, and of industrial location.

There is a negative side to all these scientific innovations which is seldom noticed despite its importance—being the loss in value of old capital which the innovation renders obsolete. Under free competitive enterprise this loss is never allowed to halt progress. The promoters of the improved product proceed to market it to all who will buy, and the producers of the displaced device just have to accept their capital losses, because they have no alternative. When all production is under a socialist monopoly, however, the case is quite different—because the responsible government bureaus resist acceptance of excessive losses occasioned by charges to obsolescence and try, usually with some degree of success, to delay the adoption of improved devices. It is inevitable, therefore, that the rate of technological progress should be slower under monopolistic socialism than under competitive private capitalism.

The loss aspect of progress in industrial technology is accentuated, also, by the fortuitous sequence of in-

ventions. For example, the American people would probably enjoy much more economical transportation service than they do today if the gasoline automobile had followed several decades more quickly on the heels of the steam locomotive than it did.

The railway, being a mass-production instrument, never was a transportation medium economically suited to short-haul transportation, but the steam locomotive was so superior both in economy and speed to draft animals that railroads were drawn on a large-scale into the short-haul and retail transportation business—when a far more efficient agent for performing this character of service was just around the corner. The result was, when motor transportation emerged from its cradle, that the railroads had either to accept capital losses and withdraw from branch-line and local service or accept operating losses and linger in it while vested interests surrounding railroad service exerted political pressure to prolong the wasteful expense. The result, inevitably, has been that the over-all cost of railroad service has been higher than it otherwise would have been, to the detriment of traffic in the zone of unquestioned railroad superiority.

The slowness of the automobile to appear on the scene had another even more costly consequence, arising from its appearance just after the steam locomotive had put self-supporting toll-roads out of business. It is impracticable to collect tolls from traffic moving distances of only a few miles, and the steam locomotive took hauls as short as five and ten miles off the highways. Until that development had, perforce, made highway upkeep a charge on general taxes, there was little opinion favoring highway development at the expense of persons other than highway users. The burden was, nevertheless, assumed by general taxation because no other alternative was practicable.

No sooner, however, had the last toll-gate disappeared and been forgotten than along came the automobile, and highway use for longer distances was revived on an unprecedented scale. So far, though, the toll-gate has been revived to only a limited degree. Instead, highways are paid for by taxes with a broad base, largely independent of the degree of actual road use—a system of charging which invites resort to highway transportation when it is not, actually, the low-cost medium for the task.

That, given a preponderance of traffic moving ten miles or more, highways could be provided by the toll-gate method almost if not entirely at the expense of the users, with a just relationship between charges and actual intensity of use, is demonstrated by any map of old-time toll-roads. In such a well-populated state as Connecticut, for instance, a map showing the old toll-roads discloses a system not much inferior in extent to that of today's main state highways. The nation could have a highway system at least as satisfactory as it has today, and doubtless at far less total cost, because improvements would tally closely with the economic demand for them—if the automobile had obliged by appearing before the toll-gates had vanished. Both railroad and highway transportation cost more today because the invention of the automobile was timed as it was.

Greater economic foresight could mitigate such losses. Writing in the late 1890's when the automobile was already well on its way, one of America's ablest economists conceded, with obvious reluctance, that there no longer remained any practicable way except general taxation to pay for highways. But if he be judged deficient in forward imagination with the information then available, what may we say of the nation today—about to embark on the biggest splurge yet in highway construction, with the airplane's traffic possibilities a far more knowable and larger quantity than the automobile was able to promise at the turn of the century? And entering upon the appallingly costly undertaking of making city streets intersectionless and suited to automotive traffic of infinite magnitude, at a time when, possibly, intense urban concentration may have already passed its zenith?

Black Gold

The tank cars of the country have stopped averaging hundreds of miles per car per day and are being stored in various parts of the country in a resumption of their pre-war status. All kinds of cars were in urgent demand during the war, but none of them ran up the tremendous mileages made by tank cars. Even as late as August petroleum shipments in tank cars from the producing areas to the East averaged nearly 300,000 bbl. per day. At one time at the height of the emergency averages of nearly 1,000,000 bbl. per day were recorded, but, in September, the average will be only about 50,000 bbl. per day or less.

The history of war-time oil movement is one of which the railways have every right to be proud. Under pre-war conditions oil moved from the southwestern producing fields by pipeline to Gulf coast ports and thence in tankers to the eastern seaboard. After we entered the war the oil tankers became especial targets for German submarines. The huge pipelines had not been built through from Texas to the East, and almost overnight the railways were called upon to take over, with a fleet of tank cars that was more than large enough for peace-time needs but which seemed woefully inadequate for this sudden demand. Individual railroads, the Car Service division of the A. A. R., the O. D. T., the I. C. C., and oil shippers and receivers tackled what seemed an insoluble problem with typical American ingenuity and solved it. The oil was shipped in trainload lots and the schedules of the trains were very fast. Also, the empty tank cars were not permitted to drift back in a disorganized fashion, but were made up into through trains scheduled at "red-ball" speeds. High speed running of what were largely over-age tank cars shortly produced many mechanical defects, but this had been anticipated, and a far-reaching tank car repair program was set up so that these defects, which involved wheels particularly, could be repaired "on the fly" and each invaluable tank car be kept rolling back and forth with little delay.

All special directions in connection with the loading and movement of tank cars, including General Order O. D. T. 7, were cancelled effective August 19, and the symbol train routes and schedules have been abandoned. The ban on the use of tank cars for short-haul shipments has likewise been lifted. I. C. C. Service Order 263 calling for penalty demurrage charges on tank cars,

which has been in abeyance since June 15, has been cancelled. The amendment to Car Service Rule 13 providing for the prompt return of empty tank cars was lifted effective September 1, and this rule has returned to its former status which places responsibility upon the owners and lessors of tank cars for disposition instructions after such cars have been released at destination.

During the time of heavy oil movement many of the railways involved were troubled with disastrous floods; others had to cope with unusually severe winter weather conditions. But, regardless of all the handicaps, the oil was handled in all-rail movement in a way that was an epic of war-time transportation.

A Primitive Solution For a European Impasse

No less serious a publication than the "Economist" (London) in its August 11 issue suggests the breaking of the vicious closed circle of coal shortage, food shortage, and transportation shortage (particularly locomotives) in the devastated regions of Europe by the employment of the one relatively available source of power —human muscles. The article points out that human muscle, considered as a chemical engine using the molecular energy of food, is "a singularly efficient engine" exceeded in efficiency only by the Diesel engine in its utilization of the heat energy of its fuel. In addition to the relative plentifulness and high efficiency of human engines, the author makes five further points pertaining to the practical utilization of human muscular power. These are that the leg muscles are stronger than arm muscles; that the rotary crank is the most economical way of using these muscles; that a man can bicycle three times the distance that he can walk; that the rolling resistance offered by rail track is less than half that of roads; and that wind resistance per head on a tandem bicycle is lower than that of a solo.

On these hypotheses the author of the article visualizes, so to speak, the gearing of the legs of the human resources of the devastated regions at the rate of 20 to 30 persons per unit to bicycle-type structures mounted on four wheels. With such "Cyclo-Tractors" the author visualizes a daily output of 40 gross ton-miles per man exerting one-eighth horsepower.

The author's analysis of the immediate problem, in which he concludes that among the mutually reacting shortages the additional food required to enable men to do heavy work can be supplied with a substantial economy of shipping as compared with the use of coal as the source of transportation energy, gives relatively little consideration to one problem; that is, the development of the so-called Cyclo-Tractor by which eight to twenty men may convert their muscular effort into tractive force on rails or highway. As simple as one may imagine such a device to be, all experience with mechanical devices indicates that a successful adaptation of the idea will not result from the first trial. The real question imposed by the author's suggestion is whether the log jam of interacting shortages will last long enough for the proposed plan to be effectively developed. Were it not for this, bizarre as it may sound, the proposal could be a factor in breaking the log jam by starting land transportation without immediate demands on the stagnated coal-mining industry.

Faster Truck Service— A Threat and a Challenge

In a recent issue of the *Railway Age* it was reported that a western truck operator had established fifth morning delivery of freight moving in either direction between Los Angeles-San Francisco and St. Louis. It was stated further that this truck line would establish similar service on Chicago-California traffic about October 1. Such service would compare with pre-war railroad schedules of fifth morning deliveries westbound from St. Louis and sixth morning from Chicago. Present railroad schedules are seventh and eighth morning arrivals, respectively.

Such moves by the truckers seem to call for a halt in the deceleration of schedules which has prevailed on the railroads through the war years, a trend which had its origin in necessity and a degree of carelessness. This action by truckers brings the western lines, in particular, face to face with a definite threat to their future merchandise traffic at a time when they are still burdened with a heavy, though diminishing, military load.

During the war, because of constantly-mounting traffic burdens and shortages of men and equipment, these roads were unable to maintain their normal freight schedules. At the same time, however, the truck operators were even more seriously handicapped, so that the competitive situation improved for the railroads. With the end of the war, many of the handicaps suffered by the railways' competitors have disappeared or been greatly reduced, and the railroads are now about to be confronted with competition keener, more aggressive and more intelligent than ever.

The knowledge gained in the handling of the record-breaking traffic volumes of the war years will help the railways in developing new competitive weapons. On the other hand, many of the lessons in traffic development pounded into railway men during the depression years have been forgotten and must be relearned. On every railway there has been a war-time tendency of certain employees, and even some operating officers, to move traffic to suit their own convenience without regard to schedules or to the wishes of the shippers.

The ending of the war has already changed the situation, as the action of this truck line shows. Not only will the railways' competitors be back in the field in full force, but there will be a diminution of the total volume of freight offered for transport. If the railroads are to continue to handle a favorable proportion of the available traffic, they must revise their operating practices now. Pre-war, or better, schedules and dependability of service are now needed. Achievement of these goals requires wholehearted co-operation by every operating department officer and employee, whether clerk, telegraph operator, train dispatcher, train or engineman, car inspector, yardmaster or superintendent.

Alton-G. M. & O. Merger Is Approved

I. C. C. plan provides for system extending from Chicago to the Gulf coast, with "conservative capitalization substantially supported by property investment"

DIVISION 4 of the Interstate Commerce Commission has approved a plan for the reorganization of the Alton and its subsidiary, the Kansas City, St. Louis & Chicago, which provides for separation of the Alton from the Baltimore & Ohio and its acquisition by the Gulf, Mobile & Ohio, forming, as the report puts it, "a system of railroads extending from the Gulf of Mexico to the Great Lakes and enjoying on a large volume of traffic potential maximum hauls in excess of those enjoyed by either of the two systems as presently operated."

The capitalization of the Alton and lessor companies as of January 1 was $89,355,351. The capitalization to be added to that of the G. M. & O. as a result of the unification, provided the commission's plan is approved by the federal court, is $40,895,537, apart from any securities issued subsequent to January 1 for rehabilitation of the Alton and acquisition of additional equipment. Alton fixed charges in 1944 were $1,931,698. Fixed charges on the securities to be issued or assumed by the G. M. & O. in carrying out the merger are $328,807, while contingent charges, including sinking fund provisions, total $1,020,375.

B. & O.-Alton Relationships

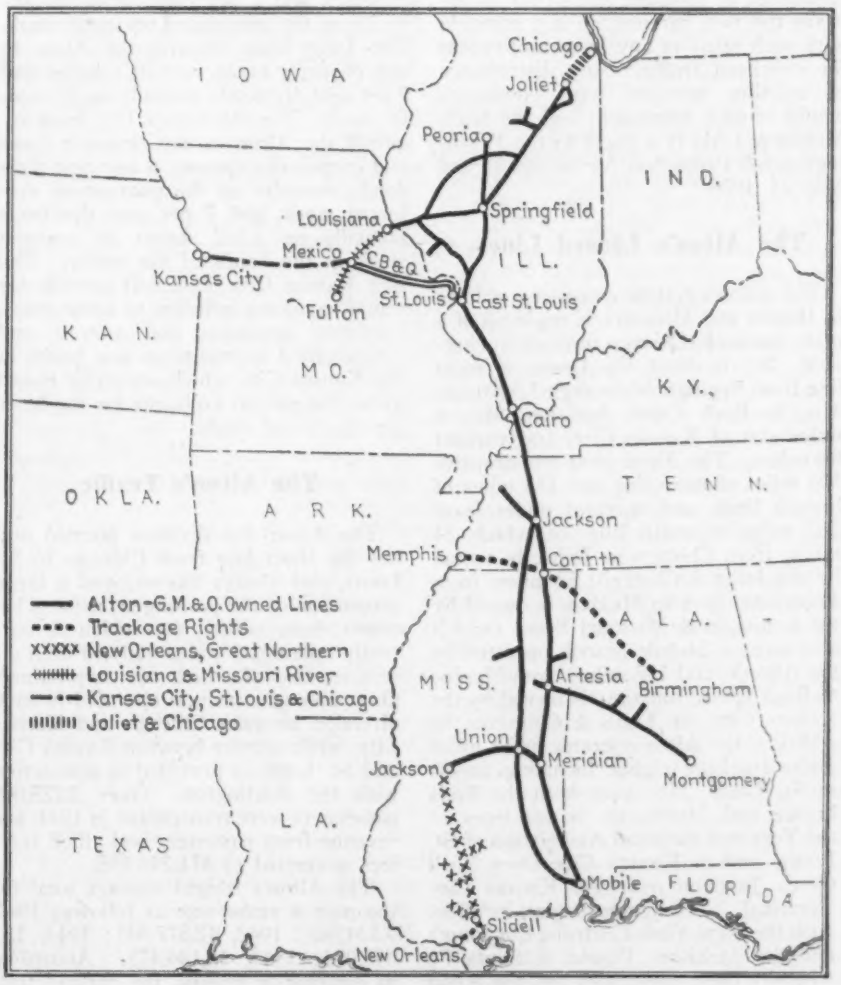
The Alton was organized in 1931 as the successor to the Chicago & Alton, the properties of which it acquired through foreclosure sale. All of the Alton's outstanding stock is owned by the Baltimore & Ohio, but the division has found this to be without value and not entitled to participate in the reorganization. In addition, the B. & O. (and its subsidiary, the Baltimore & Ohio Chicago Terminal) had made net open-account advances to the Alton and had guaranteed a $2,500,000 loan made to the Alton by the Reconstruction Finance Corporation. The B. & O. system thus had claims against the Alton amounting, with interest, to $15,576,128, with respect to which the division found that there were no assets available for distribution, so that no provision was made in the reorganization plan for these claims. In consideration of certain securities pledged by the B. & O. with the R. F. C. in connection with the Alton loan from that agency, of the Alton's R. F. C. note, and an agreement to assign to the Alton's stock, the G. M. & O. has paid the B. & O. $400,000 in cash, and has paid the B. & O. $790,925 on the B. & O.'s remaining claims. The B. & O. has indicated that it will cooperate in putting the reorganization and unification into effect.

With respect to the effect of the B. & O.'s control on the fortunes of the Alton, the division found that (1) the Alton gained some traffic in interchange with the B. & O. but lost more in interchange with other eastern lines as a result of B. & O. ownership; (2) the revenue lost by the Alton when its traffic solicitation was taken over by the B. & O. was greater than the resulting saving in expense; (3) diversion of eastbound perishable freight from the Alton through Springfield, Ill., to the route through East St. Louis, Ill., decreased its revenue and increased its expenses; and (4) the handling of equipment, while good for the depression, made no provisions for a period of better business.

With respect to the contention of certain Alton bondholders that the B. & O. should be found liable for losses suffered by them as a result of the reorganization, the division held that there was no occasion for such a provision in the plan. On the other hand, it pointed out that there is nothing in the plan to prevent the bondholders for prosecuting any claim they may have against the B. & O. "in an appropriate proceeding."

Advantages of the Merger

The division expressed the opinion that the proposal for the unification of the Alton and G. M. & O., to which there was no organized opposition, has, apparently, two advantages financially over any plan that has been suggested, or



The Enlarged G. M. & O. System

could be devised, for independent operation of the Alton. These are: (1) a greater assurance of future return on investment to holders of Alton system securities; and (2) consummation with a smaller capitalization and assumption of lower charges.

"The expected greater return," the report explained, "is due in the main to opportunities offered by unification for increasing combined revenues through holding traffic to system rails for longer hauls. The lower capitalization and charges would be due in part to proposed measures which unification would make practicable for meeting existing shortages of equipment on Alton lines with a smaller immediate increase in funded debt, and in part to the willingness of the Chicago & Alton bondholders to accept in exchange Gulf, Mobile & Ohio securities in a smaller amount than they would be willing to accept of reorganization securities of the Alton or a new company.

"Reorganization of the Alton in this manner appears compatible with the public interest since it is contemplated that an improved and expedited service will be furnished by the expanded system, with no closing of any existing routes or gateways. The unification proposed is of the end-to-end type; there is no competition of parallel lines which would be eliminated or lessened, and so far as appears the two carriers do not compete with each other to any important extent for overhead traffic. Any disturbance of existing relations with employees would be at a minimum; and the Gulf, Mobile & Ohio is a party to the Washington Job Protection Agreement signed May 21, 1936."

The Alton's Leased Lines

The Alton's system, consisting of lines in Illinois and Missouri, is made up of a main line from Chicago through Springfield, Ill., to East St. Louis, a main line from Springfield through Louisiana, Mo., to Rock Creek Junction, Mo., 6 miles east of Kansas City, and various branches. The Alton owns and operates 501 miles of main line and 153 miles of branch lines, and operates under lease 267 miles of main line, of which 34 miles, from Chicago to Joliet, is owned by the Joliet & Chicago; 52 miles, from Louisiana, Mo., to Mexico, is owned by the Louisiana & Missouri River (which also owns a 24-mile branch operated by the Alton); and 157 miles, from Mexico to Rock Creek Junction, is owned by the Kansas City, St. Louis & Chicago. In addition, the Alton operates 38.74 miles under trackage rights, including access to St. Louis, Mo., over both the Eads bridge and Merchants bridge lines of the Terminal Railroad Association of St. Louis, and to Kansas City from Rock Creek Junction over the Kansas City Terminal. Arrangements are in effect with the New York Central (Big Four) and the Atchison, Topeka & Santa Fe whereby these companies and the Alton operate certain parallel lines as joint double track, this being true of the 17.7 miles from Wann, Ill., to Bridge Junction (N. Y. C.) and the 15.5 miles from Plaines, Ill., to Pequot (Santa Fe).

The division's reorganization plan applies to the Alton and the Kansas City, St. Louis & Chicago companies only, as it refused to approve a plan for the Louisiana & Missouri River and found it unnecessary to approve or refuse to approve a plan for the Joliet & Chicago. The Kansas City and the Louisiana are controlled by the Alton through ownership of a majority of their outstanding stocks. The Alton owns no Joliet stock (the G. M. & O. having acquired 50 shares which it formerly held), but the B. & O. owns 7,413 of the 15,000 shares issued. The B. & O. also owns 3,617 of the 17,500 shares of 6 per cent guaranteed preferred stock of the Kansas City and 1,576 of the 3,290 shares of 7 per cent guaranteed preferred stock of the Louisiana. The Kansas City and the Joliet have been operated by the Alton under perpetual lease, while the lease under which it operates the Louisiana runs 1,000 years from 1870. The plan provides for assumption of the Louisiana and the Joliet leases by the G. M. & O., while a new lease is to be executed with the Kansas City.

The Louisiana lease requires the Alton to pay all property taxes and corporate expenses and 7 per cent dividends annually on the guaranteed preferred stock. The Joliet lease requires the Alton to pay property taxes, certain salaries and 7 per cent dividends annually on its capital stock. The old Kansas City lease required the Alton to pay property taxes and corporate expenses, 6 per cent dividends annually on the guaranteed preferred stock, and 7 per cent dividends annually on 1,142 shares of common stock in the hands of the public. The new Kansas City lease will provide for rental payments sufficient to cover taxes, corporate expenses, and interest and sinking fund payments on new bonds of the Kansas City which are to be issued under the plan in exchange for the 6 per cent preferred stock.

The Alton's Traffic

The Alton, the division pointed out, has the short line from Chicago to St. Louis, and always has enjoyed a large proportion of the passenger business between these points, for which it currently operates 6 trains daily in each direction, two of which are streamlined. One passenger train is operated in each direction between Chicago and Kansas City, while service between Kansas City and St. Louis is provided in connection with the Burlington. Over 2,225,000 passengers were transported in 1944, and revenue from passenger and allied services amounted to $11,240,435.

The Alton's freight tonnage total for the past 4 years was as follows: 1941, 9,524,848; 1942, 12,577,935; 1943, 13,649,073; 1944, 13,146,475. According to commodity groups, the carload traffic for 1944 was made up of products of agriculture, 14.5 per cent; animals and animal products, 3.3 per cent; products of mines, 27.3 per cent; forest products, 0.5 per cent; and manufactures and miscellaneous, 54.4 per cent. In 1944 the Alton handled 123,339 tons of l.c.l. freight, of which 37,349 tons originated on its lines and were delivered to connections. A substantial part of this traffic originated in the Chicago area and was delivered to connections at St. Louis for movement beyond. About 475 merchandise cars a month have been handled from Chicago, and the division suggested that unification with the G. M. & O. would provide Chicago shippers single-line access to a wider market area.

From 1923 to 1927 the Alton's revenues declined as the mining of coal declined along its lines in Illinois. Most of this tonnage had been permanently lost, it is thought. A further decline in the Alton's revenues followed acquisition of control by the B. & O., but the report points out that engineers who have surveyed the property for the trustee are of the opinion that severance of that relationship, with acquisition of new power and equipment, will make possible the recovery of traffic enough to produce at least $1,750,000 more annual freight revenue.

The G. M. & O. System

The Gulf, Mobile & Ohio is the result of the consolidation, in 1940, with the Gulf, Mobile & Northern of the properties of the Mobile & Ohio which the first-named company acquired at foreclosure sale. It owns and operates a line from East St. Louis to Jackson, Tenn., and two roughly parallel lines from that point to Mobile, Ala., one via Artesia, Miss., and Meridian, and the other via Union, Miss. From Artesia there is a branch to Montgomery, Ala., while another branch, from Meridian via Union to Jackson, Miss., connects at the latter point with the New Orleans Great Northern line to Slidell, La., which the G. M. & O. operates under lease. By means of trackage rights on the New Orleans & Northeastern it reaches New Orleans from Slidell, while it also has rights to operate between Memphis, Tenn., and Birmingham, Ala., over connecting lines of the Southern and Illinois Central. The owned mileage is 1,417, the mileage operated under lease 227; and that operated under trackage rights 304.

Streamlined passenger trains are operated on the G. M. & O. main lines between East St. Louis and Mobile and New Orleans, but local and short-haul service on main lines and branches is performed principally by buses operated by its wholly-owned subsidiary, the Gulf Transport Company. These buses in 1944 handled some 1,750,000 passengers, with revenue amounting to $1,250,000, while the rail lines handled 974,594 passengers, earning from passengers and allied service revenue of $3,218,319.

G. M. & O. freight tonnage totals for the past 4 years are as follows: 1941,

9,947,872; 1942, 13,524,665; 1943, 14,505,201; and 1944, 13,993,244. According to commodity groups, the carload traffic for 1944 was made up of products of agriculture, 9.7 per cent; animals and animal products, 1.0 per cent; products of mines, 33.7 per cent; forest products, 32.3 per cent; and manufactures and miscellaneous, 23.3 per cent. Gulf Transport, which operates 1,707 miles of truck routes, parallels the railroad's lines, performing substitute local freight and, at many points, pick-up and delivery service. The G. M. & O. in 1944 handled 177,862 tons of l.c.l. freight, of which it received about 80,000 tons from connections, more than 50 per cent of that being received at East St. Louis.

Alton Equipment Requirements

The division's report observed that studies of the Alton's equipment situation indicate that any reorganization as an independent carrier would entail heavy expenditures for additional equipment. Much of this expense can be eliminated or postponed by unification with the G. M. & O., however, it was pointed out. The latter road, for example, is carrying out a program to equip its present lines with Diesel-electric locomotives in all services. This will release its existing steam power for use on the Alton, replacing older and less powerful units now in service on that road. It is planned to use Diesel power for all through passenger trains, however.

Declining coal traffic on the G. M. & O., and release of company-service coal cars not required with Diesel power, will enable it to make over 500 cars available to the Alton for commercial coal traffic. Also, the G. M. & O. has some 700 36-ft. box cars formerly used to move lumber but not suitable for that purpose with present minimum weight requirements. These could be transferred to the Alton to replace some of that road's old cars, which are entirely suitable for the movement of pulpwood, ties, and other rough material for which the G. M. & O. can use additional equipment. Certain new equipment which the Alton is presently obtaining also might be transferred to the G. M. & O., so reducing its future outlays for that purpose. It was estimated that peak annual fixed charges on account of equipment obligations in the next 10 years might be $700,000 for an independent Alton, but only $221,000 for the Alton's portion of the unified system requirements.

Joining the Two Systems

The lines of the Alton and the G. M. & O. do not connect directly at any point, but interchange has been effected at East St. Louis by the Terminal Association. Upon unification, the G. M. & O. proposes to bridge the short distance between the lines of the two roads in East St. Louis by operating its own trains over a Terminal Association line, and it has been indicated that negotiations are in prospect to use the so-called Front street line of the latter, about 0.8 miles, for that purpose. The division has deferred action on this matter until the terms of the agreement are submitted for its approval.

The Alton is one of the proprietary companies controlling the Terminal Association, owning 6.25 per cent of its capital stock and being a guarantor of its bonds. The G. M. & O. will acquire this interest and assume the liabilities. The Alton also is one of the proprietary companies controlling the Kansas City Terminal Railway, owning 8.33 per cent of that company's stock. Its arrangement for the use of the Kansas City station expires 6 months after termination of the trusteeship, however. The unification plan provides for assumption of this stock ownership by the G. M. & O., but the latter does not thereby assume liability for any of the terminal company's bonds. Any extension of or substitute for the arrangement for the use of the Kansas City station will require commission approval.

What the G. M. & O. Will Do

Summarized, the G. M. & O. has been authorized by Division 4 to (1) purchase all Alton owned properties; (2) acquire control of the Louisiana & Missouri River and Kansas City; St. Louis & Chicago through ownership of stock; (3) lease the properties of the Louisiana and the Joliet & Chicago; (4) acquire joint control, through stock ownership, of the Terminal Railroad Association of St. Louis, Kansas City Terminal Railway, and Joliet Union Depot; (5) acquire joint use of the Joliet passenger station and other facilities; and (6) acquire certain trackage rights now held by the Alton.

To carry out these transactions, the division has further authorized the G. M. & O. to (1) issue 328,787½ shares of no-par value common stock and $22,675,000 of series B 4 per cent general mortgage income bonds, due in 2044; (2) assume liability for $3,308,000 of Alton 2¼ per cent equipment trust certificates of 1944 and $4,924,648 of the Alton trustee's promissory notes evidencing obligations under conditional sale agreements for acquiring new equipment; (3) assume the Alton's liability for dividends on certain stock of the Joliet & Chicago, Louisiana & Missouri River, and Kansas City, St. Louis & Chicago; and (4) assume liability severally with other proprietary companies for interest and sinking-fund payments on $48,335,000 of Terminal Association bonds.

At the same time the G. M. & O. sought authority to issue 50,000 shares of no-par common stock to certain officers and employees at $25 per share, subject to options to purchase good for 5 years. The division found that no showing had been made of any need for additional funds, and it doubted the propriety of assigning to this stock a value of $25 per share when the plan for acquisition of securities of the old Alton company assigned a value of $30 per share to the stock issued in that connection. It did, however, authorize the G. M. & O. to issue the 50,000 shares of stock for sale to officers and employees at $30 per share, upon the condition that the proceeds be applied to debt retirement and additions and betterments.

While the division approved, in principle, the arrangement contemplated in the unification plan for the lease of the Kansas City, St. Louis & Chicago and the assumption of liability for certain bonds to be issued by that company, action on this phase of the proposal was deferred pending approval of the issue.

Capitalization of the G. M. & O.

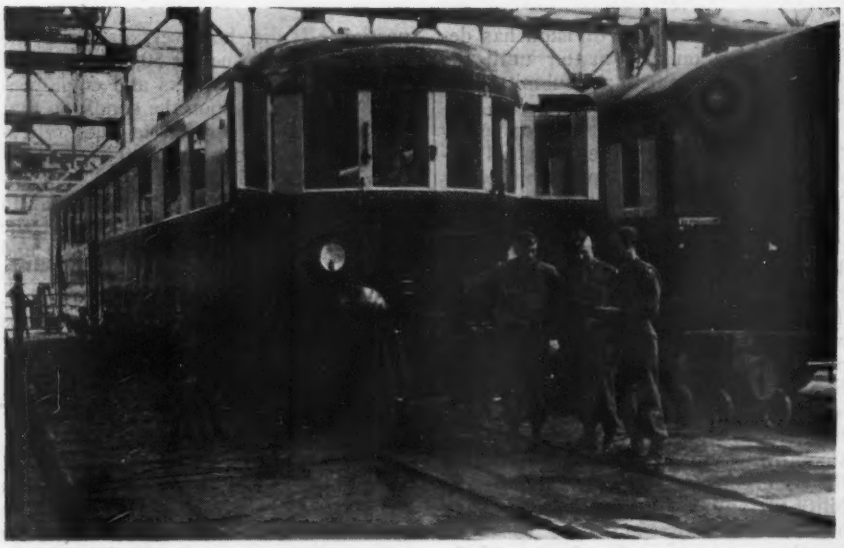
The capitalization of the G. M. & O. on December 31, 1944, was $67,185,703, including common stock in the amount of $8,265,891; preferred stock in the amount of $28,442,475; and long-term debt in the amount of $30,477,337. In addition, the New Orleans Great Northern, lessor, had outstanding in the hands of the public $35,700 of capital stock and $5,259,000 of long-term debt. Fixed charges of the G. M. & O. in 1944 amounted to $1,448,034; contingent charges to $301,290; and preferred stock dividends to $1,417,656. Surplus totaled $7,608,328. While no dividends had been paid on the common stock, there are no accumulated unpaid dividends on the preferred. The Chicago, Burlington & Quincy, with 75,428 shares of common and 31,385 shares of preferred, is the largest single stockholder in the G. M. & O., holding about 12 per cent of the total voting stock outstanding at the end of 1944. However, no officer or director of the Burlington is an officer or director of the G. M. & O.

Since 1940, the fixed charges of the G. M. & O. have been reduced by $396,300, or 28.3 per cent, the division reported. The additional fixed charges to be incurred with the Alton acquisition, $428,955 for the 10 years 1945-1954, are, it is said, materially less than the average income available for fixed charges of the Alton during the 6-year period 1936-1941, without taking into consideration any additional revenue to be derived from the longer haul and operation of the Alton as part of the G. M. & O. system, "which, in view of the complementary positions of the two lines, should be substantial."

The report went on to say that it had been pointed out that the difference between acquisition of the Alton by the G. M. & O. and acquisition by other carriers in the past is in the fact that previously control has been exercised by other companies through stock ownership without responsibility for Alton debts, and with freedom to release it in times of financial stress. The G. M. & O. acquisition, on the other hand, will result in the formation of a single unit which will enjoy the financial results of the whole operation.

The capitalization of the G. M. & O., giving effect to the unification, will consist, as of April 30, 1945, of $19,657,500 of fixed-interest bonds, $7,306,000 of

(Continued on page 528)



(Left)—Diesel Car Built for Maj. Gen. Vaughn, Commanding Officer, Bremen Post Command—Lt. Col. John W. Moe, Commanding Officer of the Transportation Corps' 757th Railway Shop Battalion; Capt. Smith and Sgt. Hammond Stand Before the Car—(Below)—Main Entrance Henschel & Son Locomotive Works, at Kassel, Germany, Bears the 757th Bn. Sign

Photographs from Lt. Col. John W. Moe

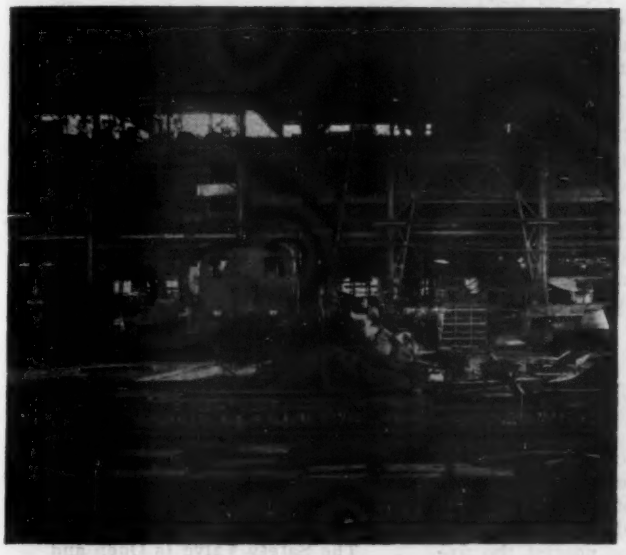
757th Shop Battalion, T.C., Runs Henschel Locomotive Works

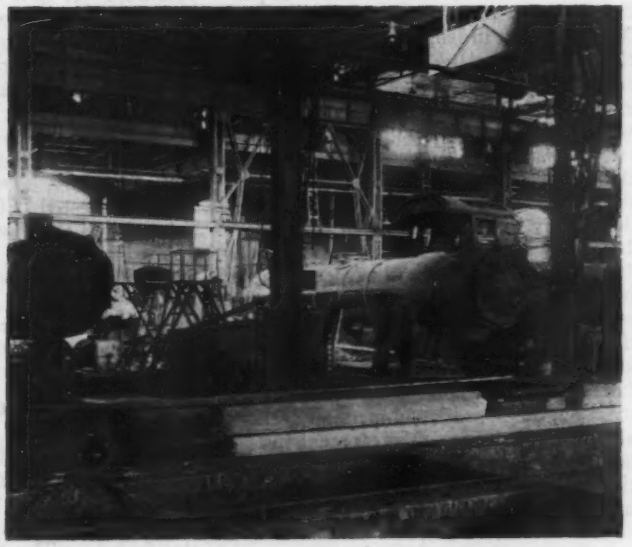
How the Boiler Shop in the Henschel Plant at Kassel, Germany, Looked to the 757th When It Came Upon the Scene

Diesel Platoon Getting Ready to Install New Diesel Motor as Col. Moe Looks On—(Below) A Section of the Erecting Shop Upon Arrival

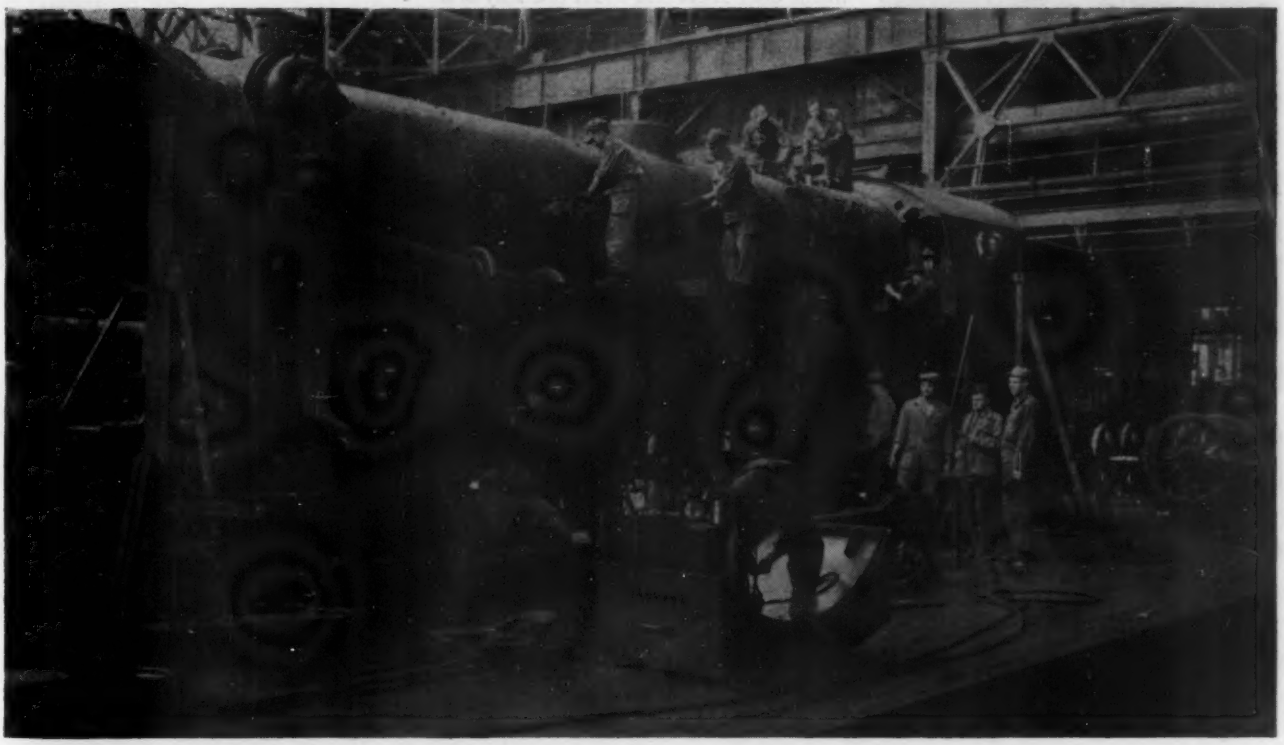
Diesel Section After Bombardment (Above) and (Below) Following Repairs by the 757th

Part of Machine Shop Wreckage (Above) That Confronted 757th—(Below) Erecting Shop After Repairs





"A" Company (Below) Commanded by Lt. Hatzfield, Builds New Condenser-Type Locomotive



Bituminous Coal Research Develops Locomotive Smoke Consumer

Laboratory studies and L. & N. tests lead to improvement in the effectiveness of over-fire draft tubes — Noise is silenced without restricting the flow of air

THE steam-air jet for smoke abatement is an old idea, and the first patent is said to have been granted to M. W. Ivison in England in 1838. Since that time, literally hundreds of variations of the original idea have been tried and some of them extensively used, but with rather meager and not entirely satisfactory results. For considerably more than a year an improved steam-air jet, developed as a result of research conducted by Bituminous Coal Research, Inc., and extensive service tests on the Louisville & Nashville, has been placed in use on 17 or more railroads and others now have plans for installing them. The air jet was demonstrated on an L. & N. switching locomotive last fall before city officials, smoke-abatement engineers, railroad men, and others at Nashville, Tenn. More recent installations have been improved by the addition of a silencing feature which does not restrict the air flow.

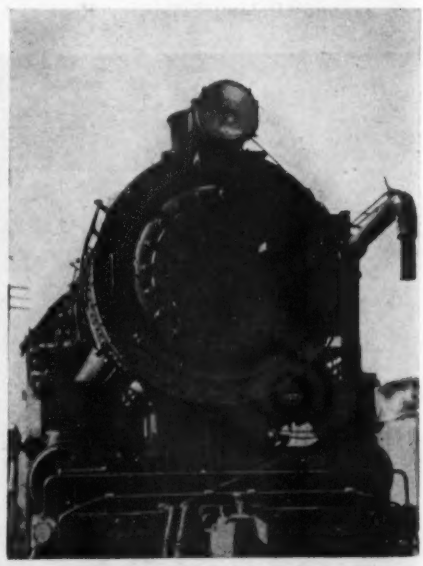
Cab View of the Over-Fire Air Valve and Blower Valve

The principal difference between the steam-air jet now in use and the plain induction tube used on many roads is an air tube of optimum length, a smooth approach to the air tube, a steam nozzle accurately centered and positioned to give maximum air entrainment, and a silencer which acts like a muffler. This device is not patented or patentable and may, therefore, be made and used by any road interested. One of the illustrations shows three of these steam-air jets applied to the left side of an L. & N. switching locomotive and there are three on the right side applied in the same manner but staggered so as to give uniform coverage of the grate area.

Induction Tubes

The number and location of the induction tubes is important if good performance is to be obtained. They are horizontal and placed in the sides of the firebox. The tube nearest the fire door (generally on the left side) should be located approximately 16 in. from the inside door sheet and about one stay bolt higher than the bottom of the firedoor opening. The tube nearest the fire door on the opposite side of the firebox should be located 28 in. or 29 in. from the inside door sheet; i.e., 12 in. or 13 in. ahead of the foregoing tube and at the same height above the mud ring. Successive tubes on either side of the firebox are spaced approximately 24 in. apart, and approximately 16 in. above the grate. The tubes may be lower toward the front to clear the arch. The induction tubes may replace staybolts, or be located between staybolts. The locations stipulated have been found to give best results; and other appliances should be relocated, if necessary, to admit of obtaining such locations.

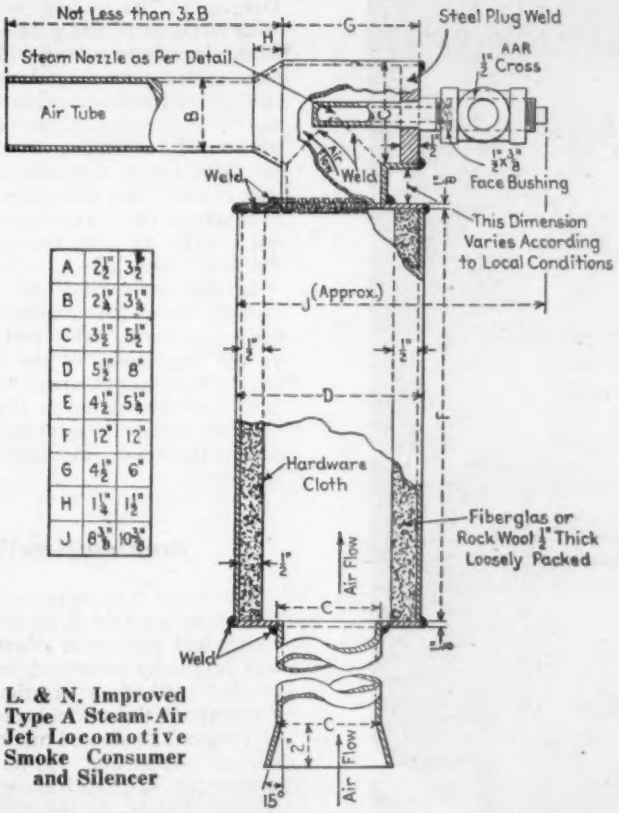
The number of air jets and induction tubes required on any particular class of locomotive is dependent upon the grate area and coverage desired. In the experience of the L. & N., it has been found that one 2½-in. induction, fitted with a 2¼-in. outside diameter air tube and 5/32-in. steam nozzle is needed for each 10 sq. ft. of grate area for locomotives in switching service with burning rates not in excess of 50 lb. per sq. ft. of grate per hour. If burning rates exceed this amount the steam nozzle may



The Safety Valve Is Open and the Stack Clear After Placing 40 Scoops of Coal in Firebox

be increased in diameter to ⅛ in., which will take care of 80 lb. of coal per sq. ft. of grate per hr. Experience on the L. & N. indicates that it is not advisable to exceed a steam nozzle diameter of ⅛ in. for an air tube of 2¼ in outside diameter. For locomotives in road service, burning rates much higher than the maximum in switching service are encountered and it is necessary to increase induction and air tubes to 3½ and 3¼ in. outside diameter, respectively, dependent upon specific data covering grate width and length; heating surface, etc.

The L. & N. steam-air jet shown in the drawing is an improved design differing from the ones shown installed in the illustration. It is the result of considerable laboratory experimenting to obtain satisfactory sound performance as well as capacity and maximum entrainment ratios. The ones in the photograph of the locomotive were loosely packed with steel-wool to give an acceptable sound level. The steel-wool, however, had the disadvantage of offering resistance to the flow of air by plugging with road dirt and disintegration due to rusting. The improved design effectively overcomes these handicaps and also gives superior results in lowered



L. & N. Improved Type A Steam-Air Jet Locomotive Smoke Consumer and Silencer

noise level. They are made principally from boiler tubes and flues and a set can readily be made in any railway boiler shop.

Operating Instructions

The steam-air jets are left turned on virtually at all times while the locomotive is under fire; while working in yards, standing and moving around shops and enginehouses; and whenever needed to avoid making smoke, such as while adding coal to the firebox, cleaning fires and building new fires. The stack blower is used for draft and elimination of smoke, following the general practice in this respect. The following instructions cover the operation of the device and if placed in a metal holder under glass in the cab, they will be accessible to the firemen and others.

(1) When going on duty, the fireman will first open the stack blower valve just enough to prevent the gases and smoke from coming out of firedoor and to raise the smoke from the stack.

(2) Open the smoke-consumer valve (indicated by a small plate "Smoke Consumer" and operated from the fireman's seat). Firemen will keep this valve open while on duty, in transfer as well as short switching service to provide a constant flow of air over the fire; also, the valve should be kept open after the locomotive is delivered to the enginehouse.

(3) Before leaving the enginehouse, see that the air induction tubes are in operation, i.e., blowing air over the fire. If not, have the steam nozzles cleaned.

(4) Place a bank in the firebox, higher at the door sheet than along the sides, but do not cover the induction tubes.

(5) If smoke is not altogether dispersed by the smoke consumer, gradually open the stack blower valve until the smoke is cleared up. Do not use the blower any more than necessary to free the stack of smoke.

(6) Maintain a U-bank at all times, and after adding coal to the fire, keep the firebox closed.

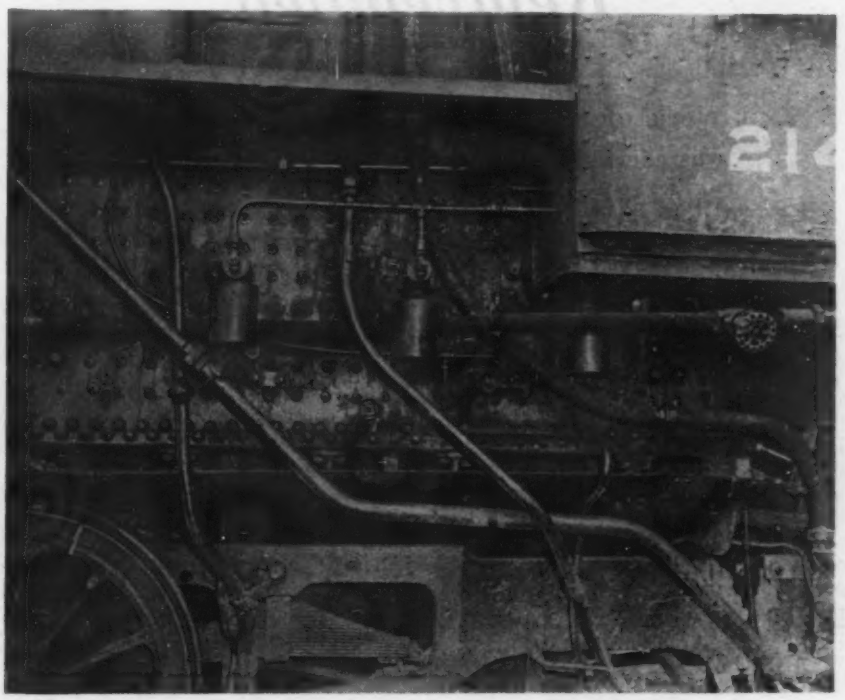
(7) The 1-in. globe valve under the operating valve to the smoke consumer is for enginehouse use only.

Among the other railroads now using the jets are the Akron, Canton & Youngstown, Atlantic Coast Line, the Baltimore & Ohio, the Canadian National, Central of New Jersey, Chesapeake & Ohio, Erie, Nashville, Chattanooga & St. Louis, New York Central System, Norfolk & Western, Pennsylvania, Richmond, Fredericksburg & Potomac, the Tennessee Central, and the Wheeling & Lake Erie.

According to the July-September Bituminous Coal Research bulletin, over 350 locomotives have already been equipped with BCR steam-air jets or modifications and inquiries are coming in steadily for installation and operating data. The bulletin also states that results are now being calculated on tests made by the Battelle Memorial Institute at the Robinson Laboratory of the Ohio State University to determine the effect of BCR over-fire jets on boiler efficiency.

Based on the work of Vaughn Mansfield, chief engineer of the Southern Coal Company, Bituminous Coal Research is also studying the problem of undergrate air distribution on coal-fired locomotives. In cooperation with Mr. Mansfield, Battelle has constructed a three-dimensional model of a locomotive firebox which shows the flow patterns of the gases inside the locomotive. Using a suspension of colloidal bentonite in water and a polarized-light refraction technique, locomotive air supply may be simulated and studied photographically.

Application of Improved Steam-Air Jets and Mufflers to the Left Side of an L. & N. Switching Locomotive



Grand Central "Sky" Rejuvenated

Work of redecorating ceiling of concourse was carried out from a large suspended scaffold, without interfering with patrons

AFTER nearly 33 years, the high, spacious concourse of the New York Central's Grand Central station at New York has a new "sky." When this station was opened in February, 1913, one of its outstanding features was the high, arched ceiling of its concourse, which had been made symbolic of the heavens, with stars, the Milky Way and the signs of the Zodiac on a background of blue. In renewing the "sky," the old one was cleaned and repaired, and then refaced with 4-ft. by 8-ft. sections of Flexboard, after which it was decorated with paint and gold leaf. The work required the erection of a large continuous scaffold, suspended from the ceiling 120 ft. above the floor level, which permitted all of the work to be done without interfering in any way with terminal operations below. Recently the scaffold was removed, and the thousands of patrons of the station again gaze in awe at the reproduction of the heavenly constellations, brighter and more inspiring than ever.

The station concourse is 287 ft. long by 120 ft. wide, with the center of its arched ceiling 125 ft. above the floor. The ceiling construction is of plaster on iron mesh, supported by angles and steel channels bolted to arched roof trusses. Originally, the ceiling was decorated with water paint and gold leaf, the work being done from a scaffold supported by steel cables extending through holes in the ceiling and fastened to angles bolted to the roof trusses or purlins. This method of suspending the scaffold was provided for in the original design so that it could be used again, as required, to repair or redecorate the ceiling, without interfering with the normal use of the floor beneath.

In the years since the station was opened, dust had accumulated on the ceiling and the paint had faded. Repeated inspections of the back side of the ceiling plaster showed that no unsafe condition existed, but in 1944 it was decided to renew the paint and decoration, and at the same time make any repairs necessary.

Scaffold Erection

A contract was awarded for the erection of the scaffold to the same company which had erected it when the ceiling was originally decorated, and the same general method of erection was used. Throughout, the scaffold was constructed of Tubelox, a patented tubular steel scaffolding, supporting 1½-in. salt-treated planking. The entire structure was erected at night, during which time only small areas of the concourse floor, directly beneath, were roped off. All scaffolding material was taken up on freight elevators to the roof of an adjacent office building, and was then carried in through windows above a light cornice high above the floor of the concourse. Construction of the scaffold was started from this light cornice and was first built up vertically to the ceiling at the sides and ends of the room, following which it was carried across the ceiling itself.

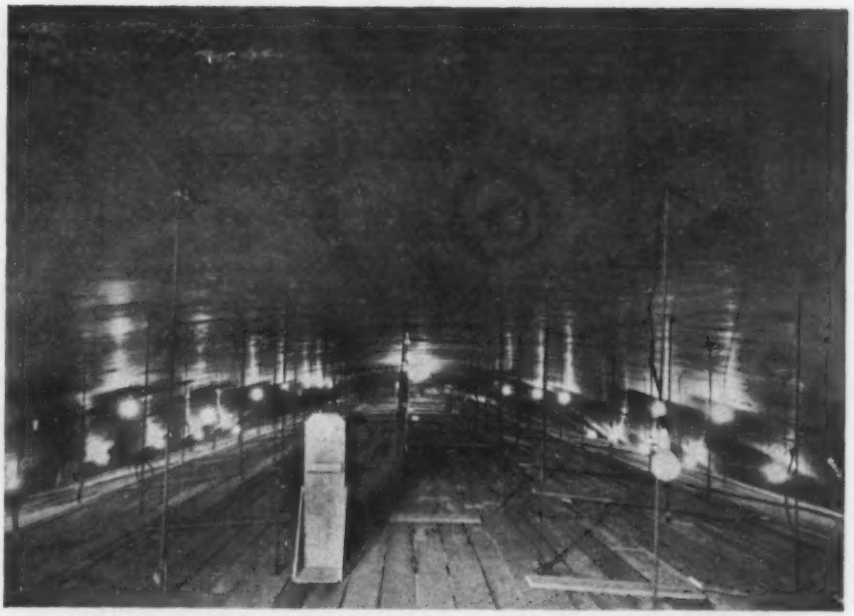
The ceiling scaffold was hung from 5½ to 6 ft. from the ceiling face, and was supported by about 600 ½-in. cables, which were doubled-back at the ends and secured by Crosby clips. In this manner the scaffold was placed section by section, the added tubular members being attached to those placed previously. As the scaffold was being erected, which required a period of two months, lights were installed above it to illuminate the working area.

When all of the scaffold was in place, railroad forces cleaned off all of the dirt from the ceiling, scraped away all loose paint, and made a careful inspection of the plaster. In places where deterioration was suspected, test holes were drilled but, despite dirt and the generally poor condition of the paint, the plaster was found to be in exceptionally sound condition. In only a few places was there slight deterioration, and these were repaired.

To eliminate the possibility of future deterioration of the plaster, the entire "blue-sky" section of the ceiling was covered with Johns-Manville asbestos-cement Flexboard. In this work, sheets of 3/16-in. Flexboard, 4 ft. by 8 ft., were cemented to the ceiling, using braces

from the scaffold floor to hold them firmly in place until the cement had set. These sheets were also fastened to the ceiling by means of U-shaped steel wires, which were extended to the steel angles supporting the ceiling through small holes drilled in the Flexboard and plaster. Approximately 20 of these wires were used to help support each 4 by 8 section of facing material.

The Flexboard was applied with its rough side downward to provide a better bond for the paint and also to prevent any reflection from destroying the optical illusion of the sky. After the Flexboard was in place, the wires were painted with red lead, following which they, and the joint cracks between the different panels, were plastered with white lead spackle, and the ceiling was ready for the first coat of paint.



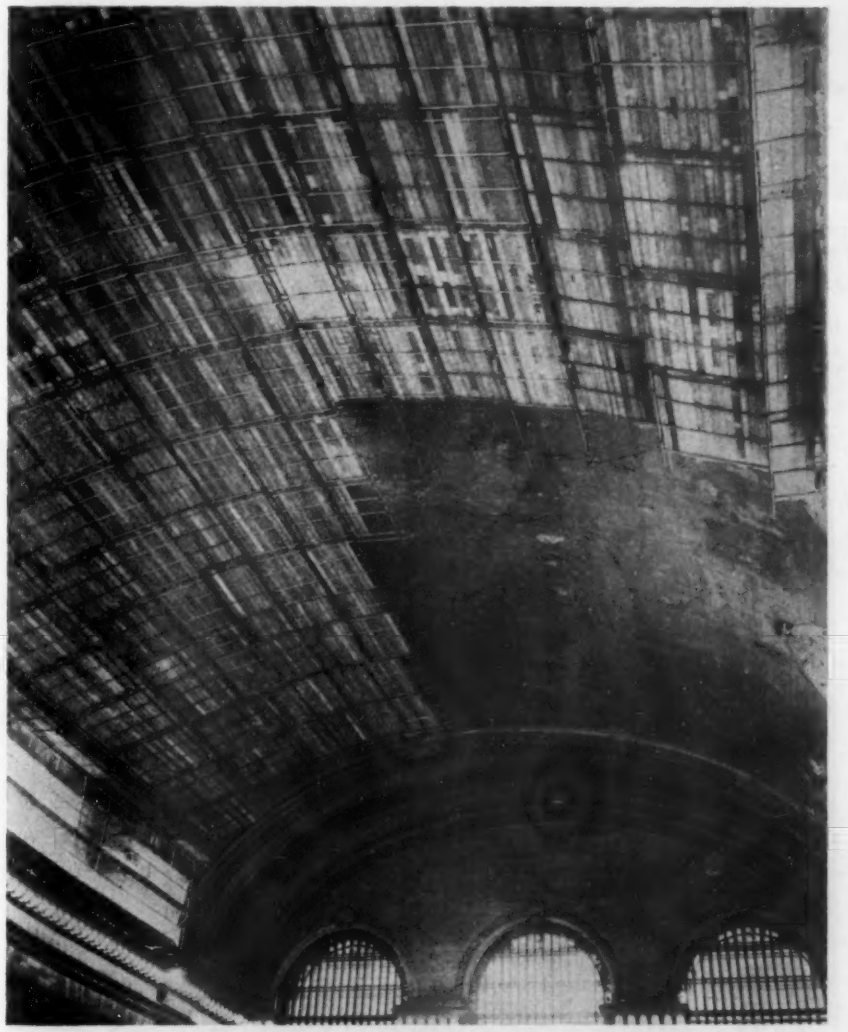
View of Working Space Above the Ceiling Scaffold, Before Flexboard Was Applied to Ceiling

Painting Work

As planned originally, three coats of oil paint were to be applied to the Flexboard, and the work was awarded to a contractor who had served as foreman on the decoration work more than 32 years previously. Extensive experiments were conducted to be sure that a color would be obtained with a dead flat finish which would have the desired effect. Also, several panels were test-painted, and some sections of the scaffold floor were removed so that these panels could be viewed in proper perspective from the concourse floor. In addition, the National Lead Company ran accelerated ultra-violet, steam and scraping tests on the paint proposed, which showed very good results.

After these experiments it was decided to apply a first coat of boiled linseed oil, a second coat of lead and oil with Paterson-Sargent Vita-Seal primer and sealer, and a third coat of lead and oil with titanium oxide, tinted a cerulean blue with a manganese pigment. When these three coats had been applied, contrary to original plans, a fourth coat, similar to the third, was added to get the uniform depth of color desired.

Following the application of the final coat, the blue was stippled with rather widely spaced daubs of various colors to give depth to the sky effect when viewed from a distance. For the Milky Way, a large number of white stipples were applied fairly close together. A total of 750-gal. of paint was required for the ceiling.



Part of the Ceiling Scaffold as Viewed from Below, When Erection Had Been Nearly Completed

Gold Leaf Decoration

The original decorative design of the stars and Zodiac was reproduced in gold leaf and a total of 40,000 lin. ft. of ¾-in. wide gold leaf was used for this purpose. When the station was built, nearly 60 stars were provided, with individual lights which shone at night through small mica discs. This arrangement was unsatisfactory because the discs collected dust and the stars became dim. To correct this condition, it was decided to let the lights shine through unobstructed holes in metal plates placed above ½-in. holes in the ceiling. The holes in the

Hanging a Flexboard Panel Which Had Been Coated with Cement Paste. Note the Braces at the Left, Which Were Left in Place Until the Cement Had Set

plates vary in size from ⅛ in. to ½ in. in diameter, according to the approximate brightness of the stars represented. With this arrangement, any accumulated dust about the holes can be blown away readily, if desired.

The work of removing the ceiling scaffold progressed more rapidly than the erection, and was completed in about a month. Before the scaffold was removed, the scaffold floor was completely vacuumed so no accumulated dust or other material would drop to the floor below. As in the erection, the removal was done at night and sections of the concourse floor were roped off. As the ceiling scaffold was removed, small metal discs, painted blue and attached to wires, were pulled up to cover the holes through which the scaffold-holding cables had extended, and the wires were fastened above the ceiling.

Numerous safety and fire-preventive measures were taken throughout the ceiling work. Among these, all scaffold planks were pressure-treated with a fire-resistant salt and all drop cloths used were treated to make them fireproof. Furthermore, a "no smoking" rule was rigidly enforced and nine carbon dioxide fire extinguishers were installed on the scaffold.

The work described was done under the direction of E. B. Moorhouse, assistant terminal manager, Grand Central terminal, New York Central, New York. The scaffold work was done by the Chesebro, Whitman Company, Inc., Long Island City, New York, and the painting was done by Charles Gulbrandsen, New York.

Applying One of the Four Coats of Oil Paint on the Ceiling

Grappling with Operating Problems

Reports of committees of Superintendents Association discuss post-war ways and means

BECAUSE of the war-time ban on conventions, the regular session of the American Association of Railroad Superintendents was not held this year. In place of a convention, the reports of the various committees have been submitted to the executive council of the association, and, after approval by that body, have been released to the members. The reports cover speeding up yard operations; post-war personnel problems of the operating department; operating possibilities and limitations of Diesel-electric locomotives in road service; the supervision and control of division activities; increasing the utilization of steam locomotives; and the creation and development of an effective division staff.

Abstracts of these reports follow:

F. B. Hank, assistant to vice-president and general manager, New York Central, was general chairman of a committee reporting on speeding up yard operation. The report is in seven parts, consisting of an introduction and conclusion and five subcommittee reports on various phases of yard operations. The introduction states: "A great deal of experience has been accumulated but the uncomfortable truth is that less has been accomplished in improved (yard) operation than in any other field of railroad endeavor. Speeding up all phases of railroad operation is a necessity, with the yard offering the maximum possibilities."

Yard Facilities

The subcommittee reporting on yard facilities stressed the importance of improved track structures, particularly with respect to switches and frogs, as a means of reducing yard derailments, with consequent delays to yard operations. Good drainage is held essential to good track, and frequently improvements of this type require relatively small expenditures. The subcommittee calls attention to the desirability of yard tracks being of sufficient length to accommodate in and out bound trains and to permit classifying cars without doubling. Possibilities of rearrangement of switches and leads to reduce interference and secure longer tracks are numerous and should be studied. Recommendations are also made for wider spacing of some yard tracks to permit minor repairs to cars in "maintrackers" which are run solid through intermediate terminals.

The subcommittee states that in hump yards grades that are heavier than necessary are often found, resulting in impact damage to both cars and lading. It is pointed out that high speed over the hump is not the end to be sought, but rather minimum time from entrance to exit, and that this can best be accomplished by keeping car speeds to that rate which permits the most nearly continuous flow of classification with a minimum of delay for trimming.

Car retarders are said to be installed primarily to reduce expenses by eliminating the use of car riders and to reduce yard delays. They are considered expensive as to initial cost and maintenance, but justified if traffic volume is heavy. In installing retarders, hump height and run-off grades, location of switches and towers and lighting facilities must all be considered. The report states that power operated switches can be used to advantage in many places other than in retarder operated yards. Suggested locations are at the main track yard entrance and exits and where tracks lead to special facilities such as ice docks and stock pens.

Adequate lighting is recommended as aiding in faster yard operations and decreasing the hazard inherent in night operation. Car inspection pits, equipped with suitable flood lights, are aids to location of bad-order cars before the final train inspection and reduce delays caused by switching out bad-order cars.

Rip tracks are considered among the most important features of yard operation. Special attention should be given to drainage, track maintenance, spacing of tracks, buildings, lighting and to employee facilities. The subcommittee feels that elimination of congestion in yard buildings is important. Improvements in office lighting, acoustical treatment of rooms, modern rest rooms, and good housekeeping are considered of prime importance.

Other facilities discussed are the location of fuel and water facilities for both road and yard engines, the provision of yard air, the use of hot oil, the location of stock and icing platforms, improved access to yards for employers, including adequate parking space and arranging transportation to remote yards, provision of sleeping and eating establishments, location of caboose tracks, detection of oversize or overweight loads, and the uses of Recordak and facsimile machines.

Yard Motive Power

The report of a subcommittee on yard motive power, of which W. M. Murphy, superintendent, Baltimore & Ohio, was chairman, states: "Yard operation revolves around its power. The locomotive pool should be sufficient to meet peak demands, and should be maintained at the highest possible level. If cars are to move through a yard in the minimum time, the related facilities are of no help if the yardmaster is short of power." It is suggested that careful location of water columns and a scheduled time for taking water will reduce engine delays. The use of auxiliary water tanks for hump locomotives is also reported upon favorably. The subcommittee believes that analysis of engine assignments for existing steam power will be as beneficial in improving utilization as it is when Diesel switchers are substituted.

Diesel switchers are found to have marked advantages in yard service because of their ability to operate for long periods without fuel or servicing. Among the other operating advantages claimed for the Diesel is its ability to operate on short radius curves without the use of reach cars. If Diesels are adopted in yards, special maintenance facilities apart from those used for steam locomotives are recommended, and provisions to prevent freezing in the event of non-continuous operation must be made.

Yard Communication

The subcommittee on yard communications said: "In any yard the efficiency, measured by the time required in moving a car from entrance to exit, is directly proportioned to the speed with which instructions can be given." The subcommittee recommends that telephones be located at all points which govern the yard operation, adding that the service is inexpensive compared with the total cost of operating the yard. It is pointed out that installation of additional phones is of little benefit when circuits are overcrowded as this results only in more busy signals.

Loudspeakers are considered a "must" in retarder yards in order to provide instant communication between the towerman and the hump conductor. It is also suggested that they can be used to advantage along yard leads and at other points. The report points out that modern instruments are much improved as to receptive qualities over those installed years ago, and that errors can be reduced by replacing obsolete types with modern speakers. The Teletalk, a variation of the loudspeaker which permits two-way conversation through instruments mounted at various points in the yard, is also discussed. The report adds that with outdoor speakers of any type

there must be a consideration of the creation of a possible disturbance in surrounding areas, particularly during night operation.

Considerable space is given to the history and use of radio, both of the space and the carrier type. It is stated that the general advantage of radio over other methods is that it permits instant communication without connecting wires, thus opening a channel to the locomotive. Suggested uses are for hump and trimmer locomotives, where it is estimated that an increase of possibly 10 per cent in cars switched per engine-hour can be secured, and in industrial switching.

Also considered were teletype, pneumatic tubes and signals. Teletype is most commonly used between the yard office and the hump conductor and retarder operator to transmit switch lists, but it is being increasingly used for yard to yard communication to enable yard supervisors to plan their work in advance of the arrival of trains. Pneumatic tubes are primarily for the purpose of expediting and handling of waybills between the general yard office and the receiving and departure yards, although they also may be used for other messages. The 5½-in. tube is recommended. The report shows savings up to 30 min. to an hour, depending on yard layout, where tubes are in use. The subcommittee finds some evidence of savings in messenger costs and through consolidation of yard clerical forces sufficient to justify the installation of a pneumatic tube system, but believes that careful studies are necessary in any particular yard to substantiate that claim.

With regard to signals, it is found that wayside signals are used principally to control the movement of hump and trimmer engines in hump yard operation. Where cuts are long or curves are found, repeater signals are suggested. Some roads, it is observed, have installed cab signals in hump locomotives with good results.

It is also suggested that special wayside signals, or audible signals, can be used for other purposes, such as informing enginemen when to make air brake tests, etc.

Yard Clerical Force

The subcommittee on yard clerical force, of which C. I. Morton, superintendent, station operation, Seaboard Air Line, was chairman, reported on yard clerical forces. In hiring yard clerks, the questions of pay, seniority and promotion should be explained thoroughly and accurately. In training the new employee, he should be permitted to work under the supervision of an experienced man, rather than allow him to merely look on while the instructing clerk performs his duties. The importance of encouraging the new employee to ask questions and learn the reasons for performing each of his duties is stressed.

Yardmasters and their chief clerks are the key employees in the supervision of any yard clerical force. Both should know all of the duties of any yard clerk, and the chief clerk should be capable of working the job of any clerk in the yard. In addition he should be kept informed of all policy matters affecting the operation of the terminal.

The matter of checking cars is considered most important in any terminal to eliminate excess switching, no-bill and lost cars, and to maintain proper interchange records. Proper handling of waybills is likewise an essential factor in yard operation. It is pointed out that much empty car mileage is caused by faulty home-routes, and that much car delay arises from misplaced waybills, or failure to make periodic checks of waybills to determine if cars are being delayed in the terminal. No car should be permitted to leave a terminal without a waybill, and this requires careful handling of bills and thorough checks of arriving and departing trains. Proper handling of car orders is also necessary to prevent unnecessary back hauls. Again careful checking of yard and industrial tracks is the key to movement of empty cars and prompt filling of car orders.

The subcommittee recommends that each yard office be equipped with adding machines for computing tonnage and a liberal supply of typewriters. Teletype machines are discussed in some detail and it is pointed out that these machines have real value in providing advance consists, receiving and forwarding messages and aiding in the handling of diversion orders.

Supervision and Operation

The subcommittee on yard supervision and operation pointed out that "the successful operation of a yard depends upon its supervision," and the report stresses first the importance of the selection of supervisory employees. It indicates that it is not necessary to appoint only yardmen to such key positions as yardmasters or terminal trainmasters, but that rather the ability of the man selected is of greater importance. If an outsider is chosen, however, it is necessary that he learn the fundamentals of the work. The subcommittee considers the selection of yard supervisors from the ranks to be desirable even though not essential. According to the report, the training of the supervisors should include a working knowledge of the rudiments of the positions under their jurisdiction. The supervisor should also be taught the importance of amicable relations with his subordinates, and the meaning and interpretation of yard efficiency indices.

The properly organized yard must have a competent supervisor at its head. It is his duty to know and see that his organization functions properly during the entire 24-hour period. He should understand that yard failures and blockades make maintenance of main-line schedules difficult, and that proper classification at the major terminals can do much to relieve congestion at other points.

The report also recommends periodic checks of assignment times, the time engine is not actually performing work and the reasons therefor, the time engines turn in, etc. It is suggested that regular work sheets be employed listing the operations to be checked.

The subcommittee considers that classification of trains is highly important, recommending that railroads take immediate steps to study their operating practices in this regard. Proper classification, the report says, will eliminate duplicate switching, reduce expense and speed traffic. "Main-tracking" is also recommended, but it is emphasized that this depends on proper classification if it is to be effective.

The committee on personnel problems, of which C. A. Fink, general superintendent, Missouri Pacific, was chairman, reporting on post-war personnel problems of the operating department, stated that in the post-war period one of the operating officer's primary tasks will be to raise the standards of the operating personnel by education, training and selection. Continuing, the committee says that there has been a deterioration in the relationship between the employee and the railroad and that an improvement in this field must be considered one of the primary problems of the operating officer.

It is stated that the supervisor should endeavor to obtain a clear understanding of the employee's viewpoint and give it consideration. "At no time," says the report, "should he resort to sharp practice to defeat the intent of contractual agreements. Sincerity of action and purpose in dealings will to a large measure bring about co-operation."

A major personnel problem to be faced is the return of men from military service. While the committee does not indicate a method of handling these men, it points out that many will have been given special training and acquired new skills and responsibilities which will qualify them for advancement, and that others, for a time at least, will be emotionally unstable.

Diesel Locomotives

The committee on Diesel locomotives, of which W. P. Libby, Jr., office assistant to vice-president, New York, New Haven & Hartford, was chairman, reported on operating possibilities and limitations of Diesel locomotives in road service, presenting a comparison of operating experience with Diesel and steam locomotives. In listing the advantages of the Diesel it finds the following important: Availability; flexibility; thermal efficiency and water economy; maintenance expense; sustained speed; servicing time and facilities; smoke elimination, noise abatement and wayside fire hazard; weather conditions; dynamic braking; employee satisfaction; public appeal. The disadvantages noted are: Initial cost, life expectancy, maintenance and facilities, lubrication, damage from overloading, high water operation, train heating. Each of these points is discussed and an attempt is made to evaluate the weights to be given them. Mention

The Rapid Disappearance of Military Trains Like This Will Permit the Superintendent Again to Place the Problem of Handling Civilian Traffic in First Position

is also made of the possible traffic effects of widespread substitution of Diesel engines, which at present burn oil, for coal burning steam locomotives, but no conclusions on this point are reached. The committee also gives specific Diesel operating information supplied by certain of its members from experience on their own roads.

Summarizing, the committee recommended that when road motive power replacements are made either as renewals or to obtain larger locomotives, or when additional motive power is required, the type of locomotive selected should be based on local requirements and on the maximum economy that can be gained.

In the application of Diesel locomotives to road service, they must necessarily make high monthly mileage because of the large capital investment. To do this effectively their assignments must be carefully worked out and followed to insure maximum possible use in freight or passenger service. Practical designs of Diesel locomotives with proper gear ratios and adequate horsepower are in operation, demonstrating the feasibility of utilizing the Diesel road locomotive in interchangeable freight and passenger service to gain maximum utilization.

The committee recommends also that consideration be given to the complete Dieselization of entire operating districts or divisions so as to eliminate all steam locomotives and facilities such as coaling chutes and devices, water tanks and pumping stations, cinder pits and extensive water treating stations. This would require sufficient locomotives to handle all train service over the specified territory during maximum business periods and, as business decreased, the extra locomotives or units could be moved to other districts or their heavy overhaul taken care of during the slack period.

The committee also recommends application of transfer and road type Diesel locomotives for main and branch line local freight service to replace obsolete and inefficient steam power that is expensive to operate and repair. It is frequently possible to operate such locomotives for part of the day in local one-way or turn-around freight service, and for the balance of the day to perform switching service at a yard for one or more shifts.

The committee on controlling the division, of which Fred Diegtel, superintendent, Delaware, Lackawanna & Western, was chairman, reported on the supervision and control of division activities and stated that the first requirement for proper control of division activities is a well trained, balanced staff of competent supervisors. It said that after initial selection and training is made, the superintendent must insist that each of his staff members handle his own work and that the superintendent must avoid making direct local decisions. The report continues that local observation by the superintendent, in person and through his deputized staff, is essential to efficient observation, and that no satisfactory statistical measure has yet been devised that correlates the figures for physical performances and their costs with the service features of daily operation, and that changes in the efficiency index may be the result of changed traffic conditions rather than improved or deteriorated operating conditions.

The report emphasizes that, with centralized accounting now necessary on many roads, there is a tendency to furnish division statistics too late to be of substantial aid to the superintendent in daily operations. It is, therefore, suggested that a division statistician be employed to provide current information. Transportation statements recommended are: Cost per car handled in yards, cars handled per yard engine-hour, cars in yards awaiting movement, cost per office item handled in stations, cost per ton handled at stations, tons of freight handled per man-hour, trains and tonnage handled on operating districts, number of serviceable locomotives and miles per day, road time of trains and train crews, initial and final terminal delays, deadheading, held away from home terminal penalties, helper crews worked and as-

sists per crew, overtime payments at each station and yard and on each assigned run. In addition, division operating statistics should be kept showing train performance, etc. Similar statements from the maintenance of way department and the mechanical forces are required where a full divisional form of organization is in force.

The committee also favors certain graphical charts for periods of five to ten years, but it warns that they must be used with care, to avoid misleading comparisons due to changed wage rates, or attempting to force current operations to conform to standards no longer applicable.

Intensive Use of Power

C. P. Blair, superintendent transportation, Norfolk & Western, was chairman of the committee reporting on increasing the utilization of steam locomotives. The committee expressed the opinion that one of the most important means of effecting economies in railroad operation is by the acquisition of modern locomotives and the modernization of existing power. It adds that "on the average the steam locomotive is not performing the service of which it is capable."

In acquiring new locomotives the committee believes the following factors should be considered. An extended period of time should be assumed for replacement of all existing locomotives and consideration given to reducing the number of types wherever practicable, but not to the point of excluding a particular type solely because it cannot be used profitably over the entire system. For freight service a locomotive should be capable of handling the greatest possible tonnage at the minimum necessary operating speeds over the ruling grades, and also of handling that tonnage at the maximum permissible operating speed elsewhere between terminals. Where segregation of manifest from drag tonnage is practicable, high speed locomotives (sacrificing tonnage) are practical. Modifications of the above requirements are desirable in order to permit the use of a locomotive that can operate over more than one division or on more than one class of train; or to permit a dual service locomotive suitable for both heavy passenger and manifest freight trains, or for manifest and slow freight trains; or to restrict the number of types of locomotives on the system to a minimum to permit transfer of power from one portion of the road to another and to keep expense for maintenance facilities and material stocks within reasonable limits.

The committee adds that tender capacities should be considered in the light of the most economical and expeditious movement and designed to allow the longest practicable fuel and water runs without regard to location of existing on-line refueling facilities. The committee believes that availability and utilization can be materially improved by such devices as roller bearings, cast steel bed castings, extended force feed lubrication, etc. It states that the ultimate conclusion must be based on economics and taking into account the capital investment required, adding that the relative importance of the latter factor depends to a great extent upon the utilization that can be secured. In reaching a final decision on the purchase of new locomotives the committee says that it should also be recognized that except under unusual conditions where terminal switching service and light traffic branch line service can be combined, it is generally more profitable to relegate older locomotives to branch line and terminal switching, and that the factor of availability should be considered in relation to schedules and service requirements.

The report states that many of the advantages of increased availability and utilization inherent in new locomotives can be secured by modernizing existing power. Suggested improvements are solid steel bed castings, roller bearings, mechanical stokers, feed water heaters, etc.

100-Mile Shoppings Condemned

The idea that a modern locomotive must enter the enginehouse for attention after each 100-mile run is held to be both erroneous and extravagant, and the report calls for revision of engine terminal operations, including the abandonment of some, and rearrangement of others. Suggested improvements leading to decreased terminal time are rearrangement of access tracks to eliminate congestion, and provision of servicing facilities adjacent to main tracks in terminals to permit "main tracking" without removal of locomotives. Relocation of water and fuel stations, or use of auxiliary tenders are suggested as means of reducing road delays. Water treatment is considered to be of the greatest value in the reduction of boiler maintenance, but the committee points out that it also adds to the available time by reducing the number of boiler washouts to one each 30 days as required by law.

Supervision of locomotive operation is considered one of the best ways to secure maximum utilization of power, it being pointed out that all supervisory employees must be educated and imbued with the desire to get the maximum service out of the locomotives. One of the most important functions in this respect is that exercised by the chief dispatcher who regulates the use of power and crews. In this connection, the committee favors the practice of maintaining a surplus of crews over engines at away from home terminals to prevent delays to power while awaiting crews, also that close co-operation between the chief dispatcher and the mechanical forces is necessary to enable the service to be protected without keeping an excessive number of locomotives under steam.

The committee states that it is generally more profitable to assign older types of locomotives to yard service than to purchase new ones. It points out that much can be done to improve availability by relocating and improving servicing facilities and by close attention to the relationship between crew assignments and locomotives in service.

S. M. Gossage, assistant manager, department of personnel, Canadian Pacific, was chairman of a committee reporting on the creation and development of an effective division staff, the report stating that the primary objective of the division staff is to secure continuing co-operation that will contribute towards the accomplishment of a specific objective. A division officer should be considered an interpreter in both directions between management and employee. In securing co-operation from employees in the obedience of an order, the report states that the order should conform to the following requirements:

It should be comprehensible to the employee.

It should be within the mental and physical capacities of the employee.

It should be consistent with the employee's understanding of the aims of the organization.

It should impose on him less burden than the consequence of disobedience.

It should issue from a source regarded as having authority.

It is stressed that division officers must not only understand these principles, but that their orders must conform to them.

The report points out that it is necessary to maintain at all times the prestige of those who issue orders, and that this can be accomplished only if the higher officer treats his subordinate officers with respect.

Formal training schemes cover only a limited proportion of the whole field of employee education. They are considered effective when directed toward specific objects. Of primary importance in employee training programs is the selection of suitable teachers or conference leaders. Visual aids such as models, pictures, slides and motion pictures are considered of particular value in rules instruction and safety work.

Informal training is considered as a continuous process that is greatly influenced by the daily attitudes of the supervisors toward their work and toward the employees. The conduct of investigations is likewise of primary importance in that it gives the supervisor the opportunity to point out to the employees involved not only what was done wrong, but also how he should have acted. There is also much opportunity through chance remarks to uncover unsound daily practices in addition to the particular failure under investigation.

The committee states that in his work of training men, the superintendent must be prepared to have others profit from his work, one of the tests of his effectiveness being the quality of the men he produces for advancement. It is pointed out that an officer who stands in the way of deserved advancement of a junior officer forfeits that feeling of loyalty that is the foundation of effective teamwork, thus undermining the morale of the entire division.

On the Employment of College-Trained Engineers — a Communication

Critic of a few weeks ago now offers many constructive suggestions looking to a scientific approach to this problem

EUROPEAN THEATER OF OPERATIONS

TO THE EDITOR:

While my comments relative to the attitude of the railways toward college-trained men, published in the *Railway Age* of July 21, were of a critical nature, there are certain constructive aspects of this subject which should be offered in an effort to help indicate more clearly the problems involved. With this thought in mind, I offer the following discussion as a follow-up to my previous letter.

In the first place, it is necessary that one study the problem of college graduates for railroads just as carefully and analytically as a railroad engineer investigates and plans a railroad construction project, taking into consideration the problems of materials, cost, economic justification, and methods of construction. Basically, the problem, except that it is limited in scope to college graduates and railroad management, is similar to the general over-all problem of employer-employee relationship.

The majority of modern personnel problems are always presented by both of the parties concerned, labor or employees on the one side and management or employers on the other side. As the college graduate is not represented to present his views in this particular discussion, it is necessary that some thought be given to the problem as he sees it.

Study College Man's Viewpoint

If the matter of hiring qualified college graduates is of importance to the railroads, then it follows that critical study should be given to the problem so that both management and the college graduates have a clear understanding of all of the problems involved and of the desires of both parties. For a railroad to hire a college graduate and then lose him after five years' employment is of no more value to the road than for a ball club to get a player on first base and then watch his teammates strike out.

Just as it is necessary to bring players from first base, to second, to third and home plate to win a ball game, it is also necessary for the railroads to bring college graduates to home plate after they reach first base. Any program that does not provide for and offer a method for doing this is of no more value than past programs. Therefore, it would be wise for the railroads to study the problems and desires of college graduates so that those of them who follow railroading as a profession do not die on first base, as many have done in the past, as was inferred by the comments of the colleges in the article entitled "Do the Railways Want College Men?" which appeared in the April 21 issue of *Railway Age*.

As a railroad company desires to study the qualifications, personality, characteristics and ambitions of a future employee before hiring him, the college student is justly interested in knowing what the railroads have to offer in return for his services. Since the study conducted by the American Railway Engineering Association, reported in the article previously referred to, concerns itself primarily with the engineer, I will limit the following discussion to that type of personnel.

Like all ambitious normal people, the engineering college graduate will be interested in his financial return, which must be sufficient both to attract him and retain him. Another important consideration will be the opportunity afforded him for development. He will continually question his efforts and surroundings to determine his "professional advancement." No ambitious young engineer can be expected to remain a chainman or a rodman because of a century-old seniority list, or to await advancement offered only by the death of a senior member of the staff. Neither does he care to invest four years of his life and money in a college education, only to find himself under a high school classmate with four years' seniority. This is considered a sensitive point, and it is to be recognized that deserving men who were not fortunate enough to procure a college education should receive some reward and protection for their years of employment. On the other hand, it is equally important that seniority should not retard the advancement of a college graduate.

The college graduate will also appreciate any advice, help and encouragement from experienced fellow engineers in his professional development. He will, as an engineer, place a value on his opportunity to serve his fellowman, a value which cannot always be expressed by monetary reward, but which can, at least, be measured in personal satisfaction. Other factors of interest to the college graduate will be vacations, sick leave and retirement income. His home and social life are other important factors, but as a maintenance-of-way engineer, he must be prepared at all times to work 24 hours a day, if necessary, his work taking priority over even the most highly-rated social events.

The bewildered college graduate needs up-to-date information about his profession to help him make a correct choice regarding his future employment. Therefore, it is recommended that the A. R. E. A. committee considering this subject take steps to find and present this information to the prospective railroad engineering student so that he can arrive at a logical conclusion regarding his future.

It also seems imperative that the A. R. E. A. committee consider the fact that all engineer college graduates are not well qualified to fill railroad positions. In this connection, a check or qualification list might well be prepared, listing those personal, physical and technical characteristics which are considered necessary, desirable and non-desirable. Such an analysis of prospective employees would not only be of benefit to the railroad, but would also help to weed out the undesirables in their first year of college, thereby saving a considerable amount of time and expense for the prospective railroad engineer who does not possess the necessary qualifications for railroad work. It would also provide the colleges with up-to-date information as to the desires of the industry. Our present railroad engineers are in the best position to study and determine these qualifications, and to present their recommendations.

The above problem presents the question as to the specific qualifications the engineering college graduate should possess for successful employment with a railroad. Should his education be of a narrow nature, with specialization in technical courses, such as advanced railroad surveying, railroad construction, and mechanical design, or should his education be of a broader nature, including more United States history, economics and literature?

Longe-Range Plan Needed

This question should be studied from several points of view. First, members of the A. R. E. A. committee should, by a questionnaire, canvass all members of the A. R. E. A., asking those questions which the committee finds pertinent to the subject. The answers should then be screened and analyzed. As railroad managements are interested in utilizing the personnel, their opinions and desires should be requested and studied regarding the particular characteristics wanted. A comparison should then be made of the engineers' reactions and the desires of management.

This question of the employment of college-trained men is also related to the over-all policy of the railroads with respect to their use of these men in the future. Do they plan to place them in forethought positions, or is it to be a matter of luck and chance? A few railroads will reply, "We have a plan," but, in general, this will not be the case. There is a difference between a well thought-out personnel program and the usual railroad-published monthly magazine presenting the local news along the line. And so another approach to the problem would be for the A. R. E. A. committee to ask the railroads for a synopsis of their plans for the future use of college graduates.

Why should the A. R. E. A. and railroad management go to all this trouble?

The writer would point out that no railroad would invest in a locomotive without first determining the desired characteristics of the locomotive they want. A Diesel switch engine would not be purchased to pull an l.c.l. freight "hot shot" on a 500-mile "overnight service" run. A railroad does not go to a builder and say, "Sell us a locomotive"; rather, it presents its definite desires and requirements to meet a particular problem. So the personnel problem must be studied continually and analytically, and altered as necessary to meet "today's" personnel problems.

The characteristics of personnel and human relations are very complex, closely related, and easily disturbed. The personnel problem, in reality, is the largest problem on the railways, yet it has been given little thought as compared with the problems of material. Tremendous effort is expanded in research relating to high-strength steel, locomotive boiler capacity, reduction of maintenance cost and other technical problems, while little study of human personalities and their influence is applied to the industry. Yet, our whole economic and social system, much less railroad problems, are governed by the reaction of individuals.

Need Greater Than Ever

The characteristics of the individual vary from one extreme to the other, compared with those of equipment which are controlled by the individual. Progress can be measured in direct proportion to the materials at hand and to the men who handle the materials. While industry stops to determine the desired characteristics of materials, its policy toward personnel is generally "hit and miss," although man is the heart, soul and brain of the system and controls the materials used.

No one doubts the necessity for efficient railroad service to the public and to the nation. Just as we found this true in war, we will find it true in peace. The railroads offer the greatest transportation service to the nation, and serve as the life line of our social and economic life.

Now that the war is over, this service will be needed more than ever before to move food, clothes and equipment to ports to help other nations, and also to export our many commercial and industrial products. The railroads employ large numbers of people, and, compared with other industries, they are big customers of industrial equipment. The men chosen to be future leaders in the field of railroad transportation will face and carry tremendous problems and responsibilities. It is imperative, therefore, that selective choice be made of future engineers, so that the right man will be trained and placed in the right job.

The problem cannot be considered simple. It is true that a short-term policy of hiring college graduates will produce some results, but to obtain maximum results, a long-term program based on sufficient research will be necessary. The correct answer will not be found by a few, but rather only by the sincere study and effort of all those engineers and transportation leaders who are interested in the problem. Therefore, it is suggested that the members of the A. R. E. A. committee accept the challenge offered by the problem of railroad employment for engineering college graduates and not pass the buck to the American Society of Civil Engineers, as concluded in the article of April 21 "Do the Railways Want College Men?"

HERBERT L. PRANGE
Major, Corps of Engineers

Alton - G. M. & O. Merger

(*Continued from page 515*)

equipment trust certificates, and $3,619,494 of promissory notes, making a total of $30,582,994 of fixed-interest obligations, along with $28,700,800 of general mortgage bonds bearing contingent interest, $28,442,475 (assigned value) of preferred stock, and $18,129,516 (assigned value) of common stock, making a total capitalization of $105,855,785. The average estimated annual total of fixed charges during the next 10 years is estimated at $1,405,493, and estimates of average income available for such charges, giving effect to various adjustments and assumptions as to increased revenues resulting from the unification, are equivalent to 4.03 times fixed charges or 2.21 times fixed and contingent charges. Without appraising the accuracy of such estimates, the division noted that the combined average actual net income available for charges was substantially in excess of the requirements for fixed and contingent interest.

As stated above, the capitalization to be added to the G. M. & O. upon acquisition of the Alton is $40,895,537, as of January 1.

Under the plan, holders of $45,350,000 of Chicago & Alton 3 per cent refunding mortgage bonds due in 1949 will receive for principal and interest on each $1,000 bond, $500 in new G. M. & O. income bonds and 7¼ shares of that company's common stock. General unsecured creditors of the old Alton (not including the B. & O.) will receive 2 per cent of their allowed claims in cash. Holders of the guaranteed preferred stock of the Kansas City company will receive for each share, $107 of $116 of the new bonds of that reorganized company, depending on the amount of unpaid dividends due January 1, 1942, and cash equivalent to dividends at $6 per share per annum from that date until the new bonds are issued. Holders of Kansas City common stock will receive $100 in new Kansas City bonds for each share, plus dividends in cash for the period since January 1, 1942. Unpaid dividends on other stocks of leased lines not reorganized under this plan will be paid in full. Effective date of the plan is January 1, 1945.

G. M. & O. Revised Capital Structure

Issue	Capitalization	Charges
Alton equipment obligations	$4,423,722	$96,433
Gulf, Mobile & Ohio		
New series B general mortgage bonds	22,675,000	907,000
Sinking fund therefor (contingent)	.....	113,375
New common stock	9,863,625	.....
Kansas City, St. Louis & Chicago		
New 4½ per cent first mortgage bonds	2,093,890	94,225
Sinking fund therefor (fixed charge)	.....	10,469
Joliet & Chicago		
7 per cent guaranteed stock	1,495,000	104,650
Louisiana & Missouri River		
7 per cent guaranteed preferred stock	329,000	23,030
Other 7 per cent preferred stock	4,300	.....
Common stock	11,000	.....
Total fixed-charge securities	8,341,612	328,807
Total contingent-charge securities	22,675,000	1,020,375
Total unguaranteed stock	9,878,925	.....
Total	40,895,537	1,349,182

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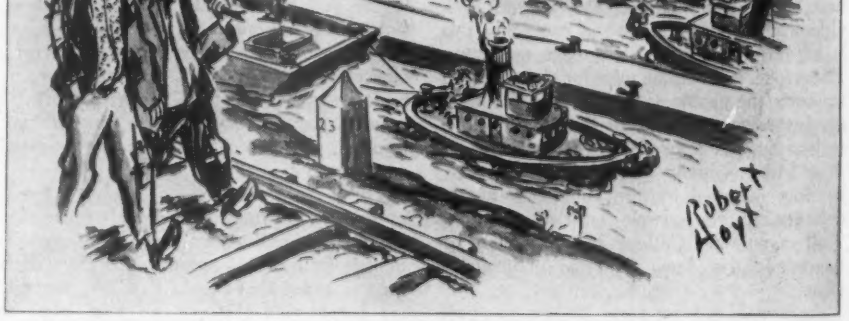

"The taxpayers pay billions for that kind of goings on, and then they call us 'bums,' because our uselessness ain't expensive."

GENERAL NEWS

Two Army Railroaders Cited for P.G.C. Job

Former 3rd M.R.S. commander praises men for "superior performance of duty"

From headquarters, Persian Gulf Command, comes word that Brig. Gen. Donald P. Booth, until recently P. G. C. commander, has commended two former railroadmen for "superior performance of duty" while in the P. G. C. Receiving this distinction were Lt. Col. Channing M. Jordan, of Las Vegas, Nev., former office engineer for the Utah division of the Union Pacific, and Lt. Col. Neal F. Snellgrove, of Elgin, Ill., once special accountant for the Chicago, Milwaukee, St. Paul & Pacific.

Colonel Jordan, who at present, as chief engineer of the P. G. C.'s military railway division, is engaged in liquidating the affairs of the Third M. R. S., in Iran, received his commendation for "excellent performance of duty" from January 25, 1943, to August 1, 1945, while serving consecutively as engineer of tracks, office engineer, assistant chief engineer and chief engineer of the Third Military Railway Service. The citation noted that because of a survey made by Colonel Jordan, and because of his staff supervision, tracks of the Iranian State Railway, "having deteriorated greatly through the lack of proper upkeep by the Iranian government, were restored to a high standard of maintenance." General Booth further pointed out that "your system of 'completion reports' covering projects over and beyond the normal development of the Iranian State Railway (such projects having been authorized by the British army), has been invaluable in preparing statements for use in determining equity of the United States Army in these installations."

In his letter to Colonel Snellgrove, General Booth commended the officer for his services as chief accountant of the Third M. R. S. from November 28, 1943, to August 1, 1945. "When you became chief accountant of the Third Military Railway Service," the letter read, "the accounts of the Iranian State Railway were in a chaotic condition as a consequence of the added pressure of maintaining records for huge quantities of Allied military supplies being transported to Russia. You completely reorganized the accounting department," General Booth noted, "established new and efficient accounting procedures, and trained both American military and Iranian civilian personnel in modern accounting methods." As a result of Colonel Snellgrove's methods, the general added, "the records were placed in such condition as greatly to facilitate final settlement of Allied accounts."

Court Refuses to Dismiss Anti-Trust Case

A motion of defense attorneys to dismiss charges of violation of the anti-trust laws filed some time ago by the Department of Justice against 47 railroads, two railway associations, two banking corporations and 31 individuals, was denied by Federal Judge John Delehant, at a hearing held at Lincoln, Neb., on September 27. At the same time, the court granted certain portions of the defense attorneys' motion calling upon the government to produce a bill of particulars, especially in reference to government charges relating to co-conspirators. Judge Delehant gave government counsel until October 22 to supply the bill of particulars, at the Lincoln Federal Court.

Bronze Star Medal Is Awarded Former Erie Railroader

M/Sgt. Charles B. Van Winkle, of Hornell, N. Y., who was transferred out of the 756th Railway Shop Battalion, in June, and returned home on the "over 42" age quota, has been awarded the Bronze Star Medal, it was announced in a recent issue of the "Yankee Boomer," M. R. S. publication. The award was made for "exceptional qualities of craftsmanship in supervision of structural steel fabrication and erection in connection with the repair of a bomb-wrecked pier building which was converted into a railway car erection shop." Before entering the service, Sgt. Van Winkle was employed by the Erie.

New Edition of Bills of Lading Rules Being Published

A new edition of "Uniform Rules and Regulations Covering Issuance, Handling and Disposition of Bills of Lading" is being distributed by the Treasury Division of the Association of American Railroads. Designated the "1945 Edition," it brings the recommended uniform practices into line with changes in the Consolidated Freight Classification and other developments which have occurred since the previous edition was issued in 1937.

Along with the rules as amended, the 34-page pamphlet contains new exhibits showing the deposit agreement, uniform shippers' order bonds, and the letter of indemnity covering delivery of import shipments. Distribution on the railroads will be similar to that accorded the 1937 edition, and copies are again being furnished to the National Industrial Traffic League for distribution to its members.

Socialists Getting Help from Business

Regulatory chaos in transport threatens nationalization, Conn warns

Government ownership and operation of transportation is on its way "unless Congress completely reverses its underlying policies of transportation regulation." Such was the prediction of Donald D. Conn, executive vice-president of the Transportation Association of America, addressing the Traffic Club of New York on September 25.

"Victorious in a world war that challenged their way of life," he said, "the people of the United States now enter on a long struggle to preserve their institutions of liberty and opportunity from attack from within by organized classes. Bulwarked by governmental policies that have set the stage for this internal war of ideologies, the plans to substitute the doctrine of the supremacy of the state for that of the individual have been carefully laid. Powerful forces are trying to take us along the same paths that Europe has already traveled.

"The C. I. O. Political Action Committee publicly served notice in Chicago last month that it would permit an elected representative to serve in Congress only if he did its bidding. Radical labor leaders threw down the gauntlet to the people of the United States at Detroit last week. Glibly, they announced that private enterprise must accede to their demands or be destroyed.

Inflation and Socialization—"Extremists in the ranks of either labor or capital cannot deal with the sensitive economic mechanisms prevailing in this period of transition from war to peace. If the leaders of organized labor resort to power politics to unleash the disastrous forces of inflation on this country, there can be no recourse for society except some form of receivership leading directly to state socialism. Socialism is but a forerunner of communism.

The most important and far-reaching of all issues in this post-war period is the future of transportation. If this bloodstream of commerce can be maintained as a private enterprise, state socialism can never become permanently entrenched here. The demands of radicals in this country are a part of a world pattern, as set forth in the declarations of the World Trade Union Conference held at London the week of February 17. This body calls for government ownership of major industry and transportation.

Business Plays Reds' Game—"Government ownership of transportation here

will come as a result of financial collapse of a sufficient part of this industry within five years following the domestic replacement period, unless Congress completely reverses its underlying policies of transportation regulation. All radical leaders need do to achieve their ends is to capitalize on the 25 years of chaos in national transportation policy—a policy that has compelled disastrous competition, resulting in economic dislocations and cycles of bankruptcies without parallel in the history of any regulated industry.

"The fundamental issue of the transportation problem is whether Congress shall continue to place government funds, which need earn no return, in direct competition with private capital, which must earn a return.

"If private ownership is to prevail, Congress must design a framework of principles within which federal regulation may be directed, through orderly and deliberate stages, to the development of a physical and financial structure of common carriers, as a whole, that not only will assure the highest standard of services, with just rewards to labor but will permit sufficient total earnings to attract a constant flow of new private credit. An opportunity must be afforded the private inventor to earn a reasonable return on his capital, prudently used. Otherwise, government takes over.

"Government ownership in the United States would mean (1) bureaucratic control over the largest single unit of purchasing power; (2) political dictation of freight rates, and (3) a throttlehold on all basic industry and agriculture."

Time Railroad Broadcast Changed

The radio program to be presented by Station WOR, New York, in connection with next week's meeting of the Atlantic States Shippers Advisory Board will be broadcast on Wednesday, October 3, from 7:30 to 7:45 p.m. instead of from 1:30 to 1:45 p.m. as originally announced and reported in the *Railway Age* of September 22, page 492.

"The Railroads Look Ahead" will be the title of the program, and those who will participate are Clare J. Goodyear, president of the National Association of Shippers Advisory Boards; Warren C. Kendall, chairman of the Car Service Division, Association of American Railroads; Colonel E. C. R. Lasher, New York zone transportation officer of the Army Transportation Corps, and Albert R. Beatty, of the A. A. R. Public Relations Department.

War Entertainers Warmly Praise Railroads

In a recent letter to J. J. Pelley, president of the Association of American Railroads, theatrical producer Billy Rose expressed his "admiration and gratitude for the job the railroads and Pullman Company have done and are doing in the face of prodigious obstacles." Mr. Rose added that though the "overall war effort of the carriers" was "common knowledge," the railroads were always both "willing and able" to give adequate service to touring productions, "without hindrance to the major task."

An excerpt from his letter follows:

"Since May 19, when my production of 'Carmen Jones' moved out of New York, until it reached Chicago, after visiting the principal cities of the Pacific Coast, on August 24, the large company of 100 persons, requiring three sleepers and three baggage cars, did not miss a booking and never did the personnel lack sleeping accommodations."

New C. O. for 743rd Battalion

Maj. Charles E. Breternitz, former trainmaster for the Union Pacific, was appointed commanding officer of the 743rd Railway Operating Battalion, in Belgium, when the former commander, Lt. Col. Frank G. Cook, returned to the States under statutory retirement regulations, the "Yankee Boomer," M. R. S. publication, has announced.

Study of Coal as Fuel for the Gas Turbine

In a program of research sponsored by the locomotive development committee of Bituminous Coal Research, Inc., a direct method of utilizing coal as the source of energy for turning gas turbines is being studied by the Battelle Memorial Institute, at Columbus, Ohio. The Battelle study is part of a more-than-one-million-dollar program on locomotive development, shared by several such institutions, and supported by six major railroads and three leading coal companies. John I. Yellott is director of research of the locomotive development committee.

The objective of the research is the development of a means of locomotive propulsion, which would give locomotives the advantages of both the high thermal efficiency of the gas turbines and the low cost of bituminous coal. In the design being studied by Battelle, coal in pulverized form would be used directly as the fuel for gas turbines.

Burlington Starts Two New Trains as "Experiment"

The Chicago, Burlington & Quincy has placed in operation two new daily streamliner trains between Chicago and Ottumwa, Iowa, after having been granted authority of the Illinois Commerce Commission to open the service as an experiment. Under the set-up this service will be in operation until June 30 of next year, at which time it may be discontinued if the trains fail to pay expenses. The first westbound train left Chicago on September 30, and the first eastbound began operations on October 1.

The new trains will run as second sections of the Denver Zephyr on the westbound trip and the Exposition Flyer on the eastbound run. Formerly part of the Burlington's Texas Zephyr, which has since received newer equipment, they will operate as four-car trains. In addition to making all of the regular stops the trains will stop also at Mendota, Ill., Princeton, Kewanee and Monmouth.

Santa Fe Seeks Counsel from Traveling Public

As a means of determining the principal desires and dislikes of travelers who ride its trains, the Atchison, Topeka & Santa Fe has published a questionnaire booklet which is being mailed to the public with a request that the booklet be returned to the Santa Fe as soon as the enclosed questions have been answered.

The questionnaire deals with every phase of train service and, in addition to having blank spaces where answers to the various questions may be written there is also ample space for additional "after thought" notes. Typical of the questions asked is one in which the railroad inquires whether the prospective traveler would favor the issuance of a credit card such as

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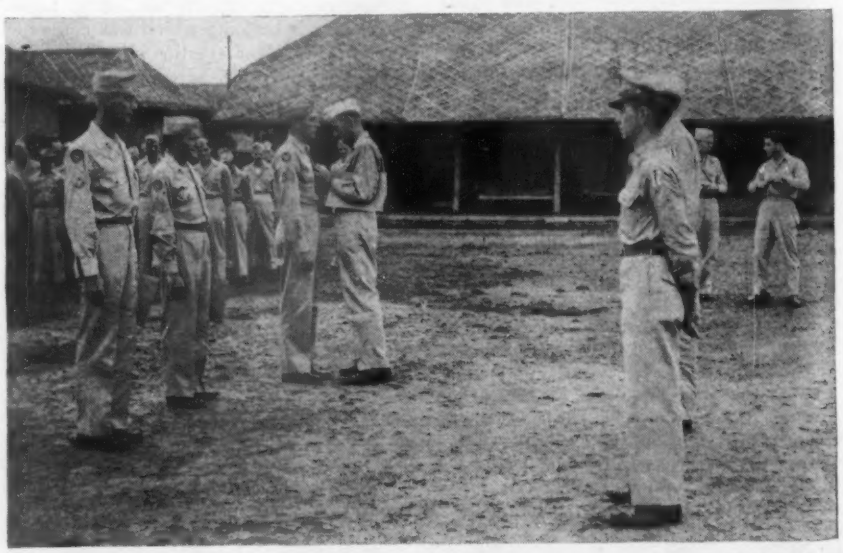


Awarding of Bronze Stars for "Distinguished Service" in C. B. I.

Cpl. Frank D. Claypool, Sgt. Harold R. Cross and Sgt. George E. DeBord receive from an unidentified officer the Bronze Star Medal for their part in transporting three U. S. A. 2-8-2 meter-gage locomotives 500 miles over mountain roads and through mud from Assam, India, to the Burma State Railways at Myingyan, Burma—Lt. Col. Marion B. Richardson, transportation liaison officer in Southeast Asia, and a member of the party accomplishing this transport fete, furnished the above photograph, and described the trip in full in the *Railway Age* of August 18.

several airline companies are considering at the present time. Other questions deal with the travelers preference in sleeping accommodations, lounge cars, barber facilities, air-conditioning and kindred subjects.

Freight Car Loading

Loadings of revenue freight for the week ended September 22 totaled 837,293 cars, the Association of American Railroads announced on September 27. This was a decrease of 18,812 cars or 2.2 per cent below the preceding week, a decrease of 60,590 cars or 6.7 per cent below the corresponding week last year and a decrease of 70,018 cars or 7.7 per cent below the comparable 1943 week.

Loading of revenue freight for the week ended September 15 totaled 856,105 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ending Saturday, September 15

District	1945	1944	1943
Eastern	154,002	162,272	169,978
Allegheny	183,863	190,874	195,589
Pocahontas	58,352	53,540	56,847
Southern	116,945	122,212	119,612
Northwestern	142,880	145,636	148,715
Central Western	138,112	140,412	137,700
Southwestern	61,951	76,540	74,325
Total Western Districts	342,943	362,588	360,740
Total All Roads	856,105	891,486	902,766
Commodities			
Grain and grain products	59,509	50,128	54,124
Live stock	19,683	20,126	20,950
Coal	180,037	171,321	179,158
Coke	11,927	13,797	14,685
Forest products	43,960	43,391	45,631
Ore	74,169	78,556	86,661
Merchandise l.c.l.	107,863	107,846	101,655
Miscellaneous	358,957	406,321	399,902
September 15	856,105	891,486	902,766
September 8	730,628	825,166	834,670
September 1	860,439	897,603	901,075
August 25	853,426	904,871	904,057
August 18	652,832	886,623	891,340
Cumulative Total, 37 Weeks	30,327,558	30,935,555	29,979,910

In Canada.—Carloadings for the week ended September 15 totaled 73,786 as compared with 66,019 for the previous week (affected by the Labor Day holiday), and 75,030 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
September 15, 1945	73,786	31,753
September 16, 1944	75,030	38,331
Cumulative Totals in Canada:		
September 15, 1945	2,542,982	1,325,973
September 16, 1944	2,575,824	1,421,093

C. N. R. Officer Sees No Early Let-up in Car Tightness

With Canadian railroads discouraging unnecessary civilian trips when every effort is being made to accommodate returning troops "in comfort and without delay from ports of debarkation to their homes or points of demobilization," a statement of J. F. Pringle, vice-president and general manager of the Central region of the Canadian National, at a recent dinner in western Ontario, would indicate that sleeping cars, dining cars and other railway equipment will be curtailed "for some time to come."

Describing the "return movement" as "tremendous," Mr. Pringle pointed out that the demands made upon the railways may not generally be recognized by the public. "You will realize something of its magnitude and the necessity for curtailing the use of passenger equipment when I tell you that on a recent weekend, the railways utilized 491 cars to move 16,014 men of the armed services from Halifax and Quebec to points in every province. Moreover," he added, "members of the armed forces will be returning to their homes in increasing numbers until such time as every member of the Canadian Forces Overseas has been taken care of. Until this is accomplished, cars will be scarce and trains will be crowded."

B. & M. Railroaders Cited for Heroism in E. T. O.

A Bronze Star Medal and a Soldier's Medal recently were awarded two former Boston & Maine employees for "heroism in Europe during the war." The first decoration, given posthumously, was for "heroic achievement" in the action that led to the death of Lt. William E. Clark, who, before entering the service, was transportation clerk in the railroad's passenger department. The Soldier's Medal went to Sgt. Herbert L. Baldwin, Jr., once conductor on the B. & M.'s Portland division, and now with the 724th Railway Operating Battalion.

The posthumous awarding of the Bronze Star Medal recently took place in the company's general offices and was witnessed by a number of the railroad's officers and employees. Joseph F. Clark, of the freight traffic department, received the award for his son, whose action at the head of a platoon of light tanks, "contributed substantially to the successful defense of the bridgehead" over the Moselle river, in France.

Sergeant Baldwin received his decoration in Paris from Brig. Gen. Carl R. Gray, Jr., director general of the Military Railway Service. The sergeant, who is the son of the Boston & Maine's publicity manager, received his citation for "heroism in France during the month of October, 1944," involving actions "above and beyond the call of duty without regard for his own safety."

Car Service Division Drops Tank Car Section

"Due to the expiration of the emergency for which it was created," the Tank Car Section of the Car Service Division, Association of American Railroads, is being abolished effective October 1. The section was created in April, 1942.

In announcing plans for the discontinuance, C. S. D. Chairman Warren C. Kendall noted that it will be necessary to continue tank car mileage adjustments as between railroads under Operating-Transportation Division Circular T-145 of May 3, 1943, pending restoration of the equalization rule (Rule 3) of Agent B. T. Jones Tariff 7-N. In the latter connection another circular issued by Mr. Kendall last week pointed out that from July 1, 1941, to August 19, 1945, tank cars were subject to control of the Office of Defense Transportation and other government agencies, and the Jones tariff's equalization rule was suspended, effective January 1, 1942, since which time the mileage settlements have been made under Circular T-145.

"It is now contemplated," Mr. Kendall continued, "that the period of suspension of Rule 3 shall be antedated to July 1, 1941, and at the same time its restoration date will be set at July 1, 1946. Although owners resumed control over the movement and loading of their equipment on August 19, 1945, when General Order ODT 7 was revoked, it is a matter of record that many tank cars are held or stored at points where there is no present or prospective loading. The extension of the period of suspension of the equalization rule will permit owners to provide orderly disposal of such cars to normal loading territories or to shops or such regular storage points as may be determined later."

Meanwhile, the C. S. D. chairman asked railroad transportation officers to report certain specified tank car movements "in order that information may be available with respect to any irregular or seemingly unnecessary movements."

N. Y. Elevator Strike Causes Express Agency Embargo

One outgrowth of the elevator strike which has paralyzed large segments of business in New York City since September 24 is the embargo which the Railway Express Agency on September 26 placed on all incoming shipments, excepting perishables and air express, from other parts of the country.

Before the embargo was made public, the Agency found itself "running out of space" to store parcels addressed to buildings where there was no elevator service. To date, the strike has not tied up service either in Brooklyn or Staten Island. A spokesman for the Agency said on September 27 that conditions are "still bad," and "the outlook isn't promising."

T. P. & W. to Cease Operations

George P. McNear, Jr., president of the Toledo, Peoria & Western, which has been under government control since March 22, 1942, has announced that the road will cease operation on October 1, the date upon which it is to be returned to private management.

Mr. McNear based this drastic and unexpected embargo on all traffic upon the allegation that he had been informed by leaders of railway unions that the road would be tied up by a strike as soon as government control ended. Mr. McNear added that he had sent a copy of the notice to H. H. Best, federal manager of the road, asking the latter to clear T., P. & W. tracks so that shippers would not suffer.

Erie Officer Elected Director of Controllers Institute

Controller Thomas J. Tobin of the Erie was made a director of the Controllers Institute of America at that group's annual meeting in Chicago, September 24. Mr. Tobin was president of the Institute's Cleveland "control" for the fiscal year 1943-44.

With the Government Agencies

Jan. 1, 1949, Limit for Power Brake Job

Makers' capacity and all shop facilities must be used under I.C.C. order

The Interstate Commerce Commission, in a report by Commissioner Patterson and an accompanying Division 3 order in the No. 13528 proceedings, has directed all railroads before January 1, 1949, to equip all of their cars used in freight service, except those equipped with passenger-car brakes, with power brakes and appliances for operating power brake systems, conforming to the specifications prescribed by the commission. "No postponement of this date will be made except upon petitions showing good cause therefore, filed by individual respondents," the report stated.

118,000 Cars Equipped—The time limit thus set was based on information from owners of freight cars and builders of brake equipment, particularly that required from individual railroads by an earlier order in the proceedings, as noted in *Railway Age* of June 9, page 1027. This information, the present report said, indicated that in the year ended with May 270 reporting carriers applied AB type brakes (which the commission has found to be in reasonable conformity with its prescribed specifications) to 118,250 cars. Shop facilities were reported to be available to equip 181,101 cars per year, while, after allowing for retirements during the next five years, about 635,500 cars remain to be equipped under the terms of the order.

From these data and others based on the situation of the larger roads, it was found that it would take from 3.2 to 3.5 years to complete the installation, assuming that the total installation capacity is fully used over the entire period. "In the absence of some special arrangements such results cannot be realized," the report went on to say, this being true, among other reasons, because some roads, much further along with their programs of brake installation than others, may equip their remaining cars in much less than that time, while others would require longer periods, ranging up to 8.5 years, to complete the work.

"After the roads which will require only relatively short periods to equip their remaining cars complete such installations, their installation facilities should not cease to function," the report observed. "If they did the result would be that an installation capacity less than the original total would be left to equip the remaining cars of other roads, and the indicated time for completion of the entire program would be correspondingly lengthened." Therefore, it added, "in order to avoid such a situation, the facilities of roads which have completed their own installations should be made available and utilized for the installation of brakes on cars of other roads."

Capacity of Manufacturers—A maximum total production of about 260,000 sets of AB brakes per year can be expected from the two companies manufacturing such equipment, the commission has been informed. Making provision for newly built cars and for equipment of privately owned cars, some 180,000 sets will be available yearly for installation on railroads' cars, it was estimated, a figure very close to the indicated capacity of the installation facilities.

The report noted the commission's view that cars used in interchange service should first be equipped to meet the prescribed specifications, but, it went on to say, "we do not, however, feel warranted in prescribing a program under which a road which has completed its installation on interchange cars would be prevented from proceeding to equip its non-interchange cars until such time as brakes have been installed on the interchange cars of all other roads. We will therefore prescribe the overall period within which brake installations shall be completed on all cars, with the understanding that no more brakes are to be installed on the non-interchange cars of any railroad until its interchange cars are completely equipped."

The report concluded with an admonition to the railroads to continue semi-annual progress reports to the commission, through the Association of American Railrads, and any road whose progress in equipping its cars does not promise completion by the prescribed date will be expected to explain its circumstances and "what is being done to correct the situation."

Stickel Leaves O. D. T.

H. Richard Stickel has resigned as director of the Property Operations Division, Highway Transport Department, Office of Defense Transportation. A former district director for the Interstate Commerce Commission's Division of Motor Carriers, Mr. Stickel is now becoming affiliated with the White Motor Company, Cleveland, Ohio.

St. Lawrence Bill

Representative Gallagher, Democrat of Minnesota, has introduced H. R. 4124, another bill to provide for approval of the United States-Canadian agreement for development of the St. Lawrence seaway and power project. Identifying himself as "one of the authors of the full employment bill," Mr. Gallagher spoke briefly as he introduced his St. Lawrence bill, calling the project "one of the most important measures toward providing employment for our returning veterans," and one which would go "a long way toward full employment."

Collision Leads to a Show Cause Order

Great Northern had no block system in use; rules not followed on Seaboard

Failure to provide adequate protection for a preceding train was found by the Interstate Commerce Commission to be the direct cause of two rear-end collisions involving passenger trains recently, one on August 6 on the Seaboard Air Line near Richland, Ga., and one on August 9 on the Great Northern at Michigan, N. D. Each collision occurred in territory where trains were operated by timetable and train orders, there being a manual block system in effect under specified conditions on the Seaboard, but no block system in use on the Great Northern.

"Show Cause"—As a result of the Michigan, N. D., accident, involving two sections of the Great Northern's westbound "Empire Builder" and resulting in the death of 33 passengers and 1 employee and the injury of 264 passengers, 1 mail clerk, 1 person carried under contract, and 43 employees, the commission has served on the railroad an order to show cause why an "adequate block signal system" should not be installed in the territory where the collision occurred, that is, from Fargo Junction, N. D., through Grand Forks to Surrey, about 275 miles.

Michigan is about 54 miles west of Grand Forks on a single-track section of the Twin Cities-Puget Sound main line of the Great Northern, in territory where the maximum authorized speed for passenger trains is 60 m.p.h. During the 30 days preceding the accident the average daily movement in the vicinity was 7.3 trains.

Time Interval—There being no block system in use, following trains were spaced in this territory by the time-interval method, enforced by operators at open stations, or by burning fusees dropped by flagmen. A 20-min. interval was required for a passenger train to follow another passenger train. At the time the trains concerned were in the territory from Grand Forks to Surrey—the accident occurred at 7:22 p.m.—the only open offices were, respectively, 27.76, 64.12, 88.72, and 145.96 miles west of Grand Forks. The interval between the trains at the last open office passed before the accident was 31 min., but the preceding train stopped three times after it had passed this office, due to a tender-truck journal overheating. The first two stops consumed about 25 min., which, according to the report of the investigation made by the commission under the supervision of Commissioner Patterson, "nulli-

fied any protection afforded by the 20-min. spacing interval."

The preceding train, First No. 1, the Pullman section of the "Empire Builder," was made up of a locomotive and 11 cars, all of steel construction, the rear car being of the Pullman-observation type. As it approached the station at Michigan, the engineer discovered that the journal which had given trouble was again smoking, and he stopped with the rear end of the train standing 1,089 ft. west of the station, and 508 ft. west of the entrance to a 1 deg. curve to the right, in order to adjust a water line that had been arranged to cool it.

Flag Not Whistled Out—The engineer of the first section said because his train had been delayed by the trouble with the journal, he purposely stopped where he did so that more favorable conditions for flagging would be provided, in his opinion, than at a point further east, particularly as he was under the impression that the office at Michigan, where there was a train-order signal, was still open. He did not sound a whistle signal calling for flag protection, however. The flagman was in the rear vestibule of the second car, in compliance with the rule prohibiting flagmen from occupying the observation end except when necessary.

Although the speed of the first section was first reduced about a mile east of the point where it stopped, and the flagman knew that lighted fusees should be dropped when his train might be overtaken by a following train, no fusee was dropped "because he thought a fusee dropped from a moving train would not remain lighted." A "few seconds" before the first section stopped, the flagman alighted, carrying a lighted fusee and a red flag, and "ran eastward." He had reached a point about 500 ft. to the rear of his train, and was giving stop signals, when the second section passed him. The conductor, front brakeman, and engineman of the first section were in the vicinity of the engine.

Collided at 45 M.P.H.—Second No. 1 approached Michigan at a speed of 57 m.p.h., there being no train order in effect restricting its authority to proceed. No warning signal was seen or heard by the engineman until they reached a point about 1,500 ft. east of the rear end of the preceding train, when they simultaneously saw its marker lights and the stop signals being given by its flagman. Action then taken by the engineer had reduced the speed of the second section to 45 m.p.h. when the collision occurred, about 4 min. after the first section had stopped.

The second section was made up of a locomotive and 11 passenger-train cars, including head-end cars, a dining car, and 7 coaches. The force of the impact separated the engine of First No. 1 from the first car, and the first car from the second, and the train was driven forward about 165 ft. The first and tenth cars of the standing train were badly damaged, and the tender and the second to ninth cars, inclusive, were slightly damaged. The rear car, however, was demolished, being telescoped practically its entire length by the locomotive of Second No. 1, which was covered by the top and side sheets. The fatalities occurred in this car.

The engine of the second section was derailed, but remained upright, with its front end badly damaged and its front flue sheet punctured. The first car of this train was separated from the engine about 25 ft., and was badly damaged. The other cars in Second No. 1 were slightly damaged.

The tender of the engine of First No. 1 is equipped with two 6-wheel trucks having 6½ in. by 12 in. journals. The journal causing the trouble was packed on the day before the accident at St. Paul, Minn., 394 miles east of Michigan. It was inspected at Grand Forks, about 1 hr. 20 min. before the collision took place, at which time oil was supplied and the packing was dressed with a packing iron. Its overheated condition was discovered by the conductor at a point about 12 miles east of Michigan, and after the train had been stopped the journal was cooled and repacked. While a water line was then arranged to cool it, this failed to function properly, and the stop just beyond Michigan was made to adjust it. After the accident it was found that the babbitt was melted and the journal bearing was cracked about 3 in. from the inner end.

Protection Inadequate—In view of the circumstances, and the opinion of the engineer of the second section that he could have stopped his train short of the first section if a lighted fusee had been displayed immediately east of the curve on which the preceding train was standing, the commission found that the accident resulted from failure to provide adequate protection. Having reviewed the position of the open offices, the report went on to remark that the road's manual-block rules provide that no train may be permitted to enter a block occupied by a passenger train, and no passenger train may be permitted to enter a block occupied by any train, except in emergency. "If these rules had been in effect in the territory involved the following passenger train would not have been permitted to enter the block occupied by the preceding train," it pointed out.

The order to show cause, to which the Great Northern is required to file a return by November 15, stated that "if there had been an adequate block signal system in use the accident would not have occurred." To comply with the requirements of the order the road either must install an automatic block signal system meeting the standards prescribed by the commission or make manual block operating rules effective to provide that "a passenger train will not be admitted to the block when occupied by another train, except under flag protection; no train will be admitted to the block when occupied by an opposing train or by a passenger train, except under flag protection; and a train other than a passenger train will not be permitted to follow a train other than a passenger train into the block except when authorized by a train order, permissive signal or prescribed form, and when such movement is so authorized the following train must proceed with caution at not exceeding medium speed and be prepared to stop short of a train or obstruction."

Block Rules Misunderstood—The accident on the Seaboard occurred at 5 p.m. at a point 7.25 miles west of Richland, Ga., on the single-track line from Savannah to Montgomery, Ala. The trains concerned were First No. 11, a westbound first-class freight, made up of a locomotive, water car, 32 cars, and caboose, and Second No. 11, westbound, a gas-electric motor car and one coach. A manual block system was in use for following first-class trains and trains carrying passengers, under timetable instructions providing that such trains must not be permitted to enter a block occupied by a preceding first-class train or train carrying passengers, and the supervisory officers said the following train should not have been allowed to leave Richland, under these instructions, until the preceding train was clear of the block, which extended to Lumpkin, a station 1.35 miles west of the point of the accident. The dispatcher and operator, however, did not so understand the instructions, and indicated that it was regular practice to admit a following passenger train to a block occupied by a preceding freight train, regardless of classification.

About 15 min. before the accident occurred, First No. 11 was stopped by an emergency brake application caused by the bursting of an air hose. The flagman said he dropped a lighted 10-min. fusee at a point about 3,100 ft. east of the point of the collision, and, having proceeded east about 1,600 ft. from the caboose after the train stopped, placed torpedoes and a lighted fusee on the track. Having been recalled by a whistle signal, he placed still another lighted fusee on the track about 500 ft. east of the rear of the train, which began to move forward a short time before the accident occurred, having proceeded about 300 ft. when it was struck by the following train. The flagman was standing near the caboose, giving stop signals, when the engine of second No. 11 passed him.

Fusees Probably Unseen—The following train was moving about 45 m.p.h., the maximum authorized speed, approaching the scene of the accident, there being no train order restricting its authority. The engineer was alone in the control compartment of the motor car, and it was not known when he discovered the train ahead, as he was killed in the accident. However, other members of the crew noticed an emergency application of the brakes a few seconds prior to the collision. They did not hear any torpedoes exploded. It was concluded that the first fusee dropped by the flagman of the first train had burned out before the arrival of the following train, and that vegetation and the 4 deg. curvature of the track prevented the engineer on that train from seeing the other fusees in time to stop.

It was estimated that the freight was moving about 5 m.p.h. and the motor train about 35 m.p.h. when the collision occurred. None of the equipment of either train was derailed. The front end of the motor car overrode the underframe and telescoped the caboose of First No. 11 a distance of about 25 ft. The superstructure of the caboose was demolished and the front of the motor car was crushed inward about 5 ft. The fuel tanks of the motor car were ruptured, gasoline became ignited, and

the wreckage of the caboose and the interior of the motor car were destroyed by fire. Two employees were killed and 12 passengers, a mail clerk, and 4 employees were injured.

Gasoline Fuel Criticized—The commission's report, prepared under the supervision of Commissioner Patterson, concluded with a recommendation that the Seaboard "establish an adequate block system on the line on which this accident occurred." "If the manual block system as provided for in the book of operating rules had been in use in this territory," it went on to say, "there would have been a common understanding as to the proper spacing of the trains involved, and Second 11 would have been held at Richland until First 11 was clear of the block at Lumpkin." In the 31 days preceding the accident, the average daily movement in the vicinity was 12.4 trains.

The report also called attention to the fact that the two employees who were killed were fatally burned by blazing gasoline from the ruptured fuel tanks of the motor car. "In previous reports involving equipment of this character," it added, "the commission has directed attention to the hazard to passengers and employees when there is a quantity of gasoline on a motor car, and to the disastrous consequences when gasoline becomes ignited as a result of an accident. In five such accidents during the 5 years prior to this accident, 52 persons were killed and 94 injured, and most of the casualties were caused by burning gasoline. In view of the hazards involved in the use of gasoline on similar equipment, conversion to a type of equipment using other fuel should be promptly effected."

Representation of Employees

The Brotherhood of Locomotive Firemen & Enginemen has supplanted the Brotherhood of Locomotive Engineers as the Railway Labor Act representative of locomotive engineers employed by the Longview, Portland & Northern, according to a check of representation authorizations which has been certified by the National Mediation Board. On the Union Pacific, the Brotherhood of Sleeping Car Porters won a recent election, thus supplanting the Trainmen, Brakemen & Porters Union No. 21458 as representative of chair car attendants.

Fined for Explosives Regulation Violation

The Interstate Commerce Commission has been advised, according to a notice by Secretary W. P. Bartel, that the New York Central on September 12 entered a plea of *nolo contendere* in the federal district court at South Bend, Ind., to an information charging violation of the commission's regulations concerning the transportation of explosives, and that a fine of $500 had been imposed.

The charge, which was investigated by the commission's Bureau of Service and prepared for prosecution by the Bureau of inquiry, was that a car loaded with and placarded "Explosives" was placed in a through freight train next to a loaded car marked "Dangerous." Investigation showed, it was stated, that the conductor in charge of the train protested to several "local officials" of the road at Elkhart against taking the train out. The controversy was settled by giving a written order, over the name of the division superintendent, by a train dispatcher directing the conductor to move the train with the cars improperly placed.

Carl Gray Now Major General

It's now Major General Carl R. Gray, Jr. The Senate on September 25 confirmed President Truman's recent nomination of the director general of Military Railway Service for promotion from the rank of brigadier general.

Wallace Promises More Free Nursing for Air Transport

Activities of the Civil Aeronautics Administration are among those to which "increased support" is to be given under the postwar "operating and organizational program" outlined for the Department of Commerce in a September 20 statement from Secretary Wallace. The secretary explained the program generally as one which calls for a "vigorous expansion and strengthening of the department's facilities to enable it to discharge its statutory responsibilities during the period of reconversion."

With respect to C. A. A. functions, the statement said that it is planned "to promote the development of civil, commercial and private aviation through expansion and modernization of airports and airways, air navigation aids, the development of advanced-type private aircraft, and technical aeronautical improvements."

Closing of "Big Inch" Will Be Delayed

Reconstruction Finance Corporation plans for an early closing of the "Big Inch" pipeline will be "held in abeyance until there is time for a thorough investigation as to what is actually the best disposition" of the line. This was revealed by Representative Voorhis, Democrat of California, in a statement made on the floor of the House September 24.

As noted in the *Railway Age* of September 22, page 499, Mr. Voorhis had protested against R. F. C.'s "haste" when it was announced that five government-owned pipelines, including "Big Inch," would be discontinued within "30 to 60 days." The decision to hold the R. F. C. directive in abeyance was reported to Mr. Voorhis by the Surplus Property Administration.

Wheeler Urges Wider Scope for No. 28300 Investigation

In a letter to Chairman John L. Rogers of the Interstate Commerce Commission, Senator Wheeler, Democrat of Montana, chairman of the Senate interstate commerce committee, suggested that the commission broaden the scope of its railroad class rate proceedings, No. 28300, to include an investigation of the class rate structure in the Mountain-Pacific territory. Its inclusion has been urged on the commission by a conference of state regulatory commissions representing the 11 states in that area, and by a number of the state agencies individually, as noted in *Railway Age* of September 8, page 421.

While the No. 28300 proceedings were confined to rates prevailing in the territory east of the Rocky mountains, the commission's order directing adjustments intended to bring about greater uniformity in the rates in that region will also affect the Mountain-Pacific territory, it was contended. Senator Wheeler went on to point out that the commission has never conducted a general investigation of the class rates in that territory, with the result that "the Far West has a number of class rate structures. The Pacific Northwest alone has several structures, all of which differ from each other in level and scheme."

This "lack of harmony," he wrote, has had "harmful results." "Some shippers and localities are more favored than others," and the rate situation has, as he sees it, "contributed to the noticeable tendency to concentrate population and industry along the coast or in areas immediately adjacent thereto."

Special permission for relief from certain tariff publishing requirements, asked by B. T. Jones, agent for the carriers, in connection with the institution of interim class rate changes as required under the commission's order in No. 28300 (reported in *Railway Age* of September 22, page 497), has been granted by Commissioner Aitchison, effective for one year.

Revamp Bill Would Permit Broadening of I. C. C.

Exemption of the Interstate Commerce Commission from government-agency reorganization powers proposed for President Truman would not preclude transfer to the commission of other agencies or their functions, according to provisions of the rewritten Manasco bill which was reported favorably to the House last week from its committee on expenditures in the executive departments. The section wherein the commission is listed among agencies for which "no reorganization plan shall provide for any reorganization," goes on to stipulate that this prohibition "shall not apply to the transfer to such agency of the whole or any part of the whole, or the whole or any part of the functions of, any agency" not mentioned in the section.

One Agency Control Possible—Since the Civil Aeronautics Board, the Civil Aeronautics Authority, and the United States Maritime Commission are among agencies left subject to the reorganization powers, the bill would give the President authority to transfer functions of those agencies to the I. C. C., thus giving the latter regulatory control over all forms of transportation. Speeches which Mr. Truman delivered on the subject of transportation while he was a member of the Senate include at least one utterance indicating that he favored such a set-up; it was made in the course of a June 16, 1938, debate on the floor of the Senate.

"I believe," he said, "that every kind of transportation should be treated alike

by the government, equally regulated, equally taxed. I think a transportation commission to control all transportation is coming."

As noted briefly in the *Railway Age* of September 22, page 501, the bill as approved by the committee gives only two other agencies—Federal Trade Commission and Securities and Exchange Commission—an exemption like that given the I. C. C.; although the General Accounting Office is exempt by its exclusion from the bill's definition of "agency." The bill is H. R. 4129, sponsored by Representative Manasco, Democrat of Alabama, chairman of the committee on expenditures in the executive departments, who also introduced the original version, H. R. 3325.

The latter, introduced shortly after Congress got President Truman's May 24 message asking for unrestricted authority to reorganize federal agencies, provided for exemption of 21 agencies, including the National Mediation Board, National Railroad Adjustment Board and Railroad Retirement Board. As indicated above, the reported bill contains no exemptions for these agencies, although such exemption is being asked by the railroad labor organizations.

Time Limit on Power—The bill's grant of authority to reorganize the Engineer Corps of the Army is carried in a separate section. The effect of the provision would be to require a separate submission to Congress of any proposal affecting the civil functions of the corps. All reorganizations under the bill would have to be submitted to Congress; and they would become effective 60 days after such submission unless disapproved by concurrent resolution adopted by both houses. Although the President sought permanent authority, the bill fixes a time limit by its provision stipulating that no reorganization shall take effect unless the plan is transmitted to Congress before July 1, 1948.

"War Time" Ended

President Truman this week signed the recently-enacted bill, H. R. 3974, to abolish "war time." Clocks will be turned back one hour at 2:00 a. m. on Sunday, September 30. The "war time" was established under a January 20, 1942, act of Congress.

Senate Subcommittee Begins Work on Security Bill

The 92 changes which the Railway Labor Executives Association is undertaking to have made in the Railroad Retirement and Railroad Unemployment Insurance acts will be taken up one by one by the Senate interstate commerce subcommittee which has the matter under consideration. The subcommittee, which has held public hearings on the Senate bill (S. 293) embodying the R. L. E. A. program, decided on that procedure at a meeting this week.

The subcommittee chairman, Senator Johnson, Democrat of Colorado, said that the group acted only on the procedural matter, deciding to ask its legislative counsel to make a digest of the 92 proposed amendments. Further meetings of the subcommittee will await completion of the digest. As Mr. Johnson appraised it, the subcommittee has a big job on its hands. He noted that 19 of the 92 amendments call for major changes, and he said that an involved bill of this kind could not be disposed of until each proposed change was considered separately and voted up or down.

The bill was introduced by Senators Wheeler of Montana and Wagner of New York, Democrats, while the House counterpart, H. R. 1362, is sponsored by Representative Crosser, Democrat of Ohio.

Status of Electric Railways

The Gulfport & Mississippi Coast Traction Company and the electric railway of the Alabama Power Company at Tuscaloosa, Ala., are "employers" under the Railroad Retirement, Railroad Unemployment Insurance and Carriers' Taxing acts, the Interstate Commerce Commission, Division 3, having found that they do not fall within the exemption provisos of those acts. The commission reports are in Electric Railway Docket Nos. 18 and 19.

Hearings on Bulwinkle Bill Begin October 9

The House committee on interstate and foreign commerce will begin hearings October 9 on H. R. 2536, the bill sponsored by Representative Bulwinkle, Democrat of North Carolina, to stay operation of the antitrust laws with respect to carrier agreements, which have been approved by the Interstate Commerce Commission.

The committee's notice said that the first week's sessions will be devoted to hearing presentations from "various groups who have representation in Washington," such as members of Congress, I. C. C., National Association of Railroad and Utilities Commissioners, Association of American Railroads, railroad traffic organizations, representatives of railway labor, and truck and bus associations. The second week will be devoted to presentations of state commissions, agricultural associations, National Industrial Traffic League, and "various citizens traffic associations and traffic boards, and chambers of commerce.

"It is going to be necessary to limit the time for this hearing," the notice added. "It is also desired to avoid any repetition in statements before the committee." All who intend to appear are asked promptly to advise Elton J. Layton, clerk of the committee, indicating "the least amount of time they will need in which to present their testimony."

B. I. R.'s Public Aids Report Has Been Printed

"Public Aids to Domestic Transportation," the report on one of the three specific assignments which the Transportation Act of 1940 gave to the defunct Board of Investigation and Research became available in printed form last week—one year after the September 18, 1944, death of the board. The report is House Document No. 159, available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at $1.75 per copy, its printing having been ordered last April when the House adopted a resolution sponsored by Chairman Lea of the committee on interstate and foreign commerce.

The printed report is a document of 1,026 pages, consisting of the "staff report," i. e., the report as prepared by Dr. Burton N. Behling, who was director of the public aids investigation; the recommendations "of the board"; and separate statements from the two members of the board who were serving at the time of its death—Chairman Robert E. Webb and C. E. Childe. The board's original chairman—Nelson Lee Smith—is now a member of the Federal Power Commission to which he was appointed a year before B. I. R. folded. Dr. Behling's acknowledgments do not mention Mr. Webb or Mr. Childe, but include an expression of appreciation for Mr. Smith's "helpful counsel."

The public aids report was one of the 18 which B. I. R. submitted to the President and Congress late on the afternoon of its last day in office; and the board's recommendations along with the separate reservations of Mr. Webb and Mr. Childe were noted in the *Railway Age* of September 23, 1944, page 468. These are modifications in one way or another of the staff report's recommendations. The latter are embodied in a section of the Behling report which is labeled "Condensed Statement of Conclusions," where there are set forth findings of the general-principle variety as well as specific recommendations as to rail, highway, waterway, and air transport.

Among his general conclusions Dr. Behling asserts that "it should be the positive aim of public policy in promoting each kind of domestic transportation, where expenditures of public funds are involved, to seek the development of each type in its relationship to an economical and adequate system of domestic transportation, with due regard for the effects of such expenditures on the transportation system as a whole." He goes on to advocate charges for the use of publicly-provided transportation facilities, set up in such a way as to require users "to bear those costs which are attributable to their use." Seemingly unimpressed with the ever-present "national defense" argument, Dr. Behling next declares that "vague representations as to the defense importance of domestic transportation facilities should not be accepted indiscriminately as a justification for public expenditures or for relieving the users of the costs which are ascribable to their direct use and benefit."

These general conclusion are applied by Dr. Behling in framing his recommendations with respect to the various types of transport. His recommendations with respect to rail transport call for repeal of remaining provisions of the land-grant-rate law—with provisions, however, for a return of granted lands still held by the carriers or a delay in the effective date of repeal to permit impounding of the government's savings until there has been accumulated an amount sufficient to acquire such lands through purchase or through condemnation proceedings. Also, it is recommended that the railroads be encouraged to liquidate their indebtedness to the Reconstruction Finance Corporation as rapidly as possible; and that the Interstate Commerce Commission review railroad mail pay rates to provide information of value in determining "the relative costs and advantages in the public interest of transporting mail by rail,

air, and highway, over long and short distances, and on routes of light and heavy mail volume."

The staff report with its appendices occupies approximately 800 pages in the printed volume. The body of the report is divided into six chapters, the first being a summary and statement of conclusions and the second an introduction. Other chapters embody the detailed discussions of public aids, in turn, to railroads, motor transport, water transportation, and air transportation.

Publication of the report as prepared by the staff, with the Webb and Childe views handled separately, indicates that Dr. Behling was more successful than directors of some of the board's other studies in that regard. In this connection it has been recalled that the board rewrote sections of such staff reports as those on interterritorial freight rates and practices and procedures of government control of transportation, conceding to the study directors a footnote here and there to indicate disagreement with the embellishments.

Mr. Childe's separate submissions on public aids occupy some 200 pages in the printed report. All of these appear in appendices, except the 6⅓-page statement setting forth his general recommendations, which appears ahead of the staff report along with a like statement from Mr. Webb and a brief summary of "recommendations of the board," i. e., conclusions on which Messrs. Webb and Childe were able to agree.

First of Mr. Childe's lengthy submissions was his "revision" of the summary and conclusions (Chapter I) of the staff report. Then came his "revision" of Chapter V, Public Aids to Waterway Transportation, a footnote revealing that this "revision" was prepared by Mr. Childe "with assistance from members of the staff of the economic section of the Board of Engineers for Rivers and Harbors," i. e., the Army engineers who are the federal government's waterway builders. With assistance "from members of the staff of the Tennessee Valley Authority," Mr. Childe prepared his next document—a "revision" of the staff report's appendix U, which set forth findings with respect to the Tennessee river. The staff report's appendix O set forth findings with respect to the Missouri river, and Mr. Childe submitted what is called an "alternative draft," prepared for him "at the Board of Engineers for Rivers and Harbors." His final submission was a memorandum from the Public Roads Administration commenting on the public-aids-to-motor-transport section of the staff report.

Contracts Between Forwarders Must Be Filed

Contracts or agreements between freight forwarders for joint loading and for terminal services and facilities must be in writing and each forwarder which is a party to such contract or agreement must file a verified copy with the Interstate Commerce Commission, according to a commission order made public last week. The order becomes effective November 19.

It stipulated that the filing was necessary "for the purpose of administration, execution, and enforcement" of Part IV of the Interstate Commerce Act. More specifically, the order cited subsection 412(a) which gives the commission authority to require forwarders to file any of their contracts relating to transportation subject to Part IV; and it quoted subsection 404(d) which reads as follows: "Nothing in this part shall be construed to prohibit any freight forwarder from entering into an agreement with another freight forwarder for the joint loading of traffic between points in transportation subject to this part, except that the commission may cancel, suspend, or require the modification of any such agreement which it finds, after reasonable opportunity for hearing, to be inconsistent with the national transportation policy declared in this act."

I. C. C. Service Orders

The Interstate Commerce Commission has vacated and set aside a number of service orders, as follows, such action being effective September 24 unless otherwise indicated:

No. 70-A, limiting to 48 hours holding of perishable freight for reconsignment or diversion. The number of diversions or reconsignments of refrigerator cars loaded with fruits or vegetables remained subject to the restrictions of Service Order No. 70, as amended.

No. 71, which suspended rules permitting furnishing stock cars larger than ordered (effective October 6).

No. 103, requiring I. C. C. permits for the movement of grain all-rail through the United States from one foreign country to another. Permits for shipments of grain from Canada moving to or via the National of Mexico are still required under Car Service Division embargo No. 400, however, according to C. S. D. Chairman Kendall.

No. 114, diverting to the Great Northern freight ordinarily moved by car float by the Chicago, Milwaukee, St. Paul & Pacific between Seattle, Wash., and Bellingham.

No. 151 (revised), prohibiting the operation of special freight trains, except under permit (effective October 6).

No. 330 (revised), prohibiting pre-icing or pre-cooling of potatoes shipped from specified western states.

No. 344, prohibiting refrigeration of grapes or potatoes moving intrastate in specified western states (effective September 22).

No. 345 (revised), restricting refrigeration of potatoes originating in western states, but modified by various general permits.

No. 346 (revised), restricting refrigeration of vegetables originating in specified western states, and modified by general permits.

Service Order No. 343, prohibiting refrigeration of watermelons or dried fruits originating in various western states, expired September 20, as provided in the order. Under Amendment No. 10, effective October 1, the provisions of Service Order No. 68 will not apply to large flat cars furnished in lieu of smaller cars ordered.

By an order of Division 2, the commission has further modified its requirements for the application of freight charges where part of the contents of an overloaded car are transferred to another car, both then being moved to destination without other freight being added. The carriers having put into effect rules covering such cases in compliance with the terms of Service Order No. 68, as amended, they have been authorized to adjust charges as there provided for shipments as to which the cause of action accrued on or after July 3, 1943.

Veteran Reemployment Rights

Selective Service's latest pronouncement on reemployment rights of returning veterans gives a broad interpretation to the question involving the temporary or other than temporary nature of the job which the veteran left to enter military service. A new statement of policy for the guidance of local boards advises that the temporary-employment question in border-line cases "should be resolved in favor of the veteran."

The pertinent provision of the Selective Service Act establishes the returning veteran's rights to reemployment in his former position if it was "other than temporary." The new statement of policy asserts that "all of the facts and circumstances" must be considered and "before a veteran is deprived of reemployment rights, must be shown clearly that the employment he left to enter the armed service was 'temporary.'"

The statement also reiterated previous Selective Service interpretations to the effect that the returning veteran enjoys "super-seniority" entitling him to his former employment status even though another worker with greater seniority be displaced. In this connection the statement rejected contentions that the law's provision, relieving an employer for whom reemployment of a veteran would be "unreasonable or impossible," can be stretched to override "super-seniority."

"The Selective Service interpretation," as the announcement put it, "meets this issue with the statement that the 'impossible or unreasonable' clause applies only to the employer and that 'consequences to third parties are not involved.' The controversial clause 'cannot be applied to cover the effect of restoration of the veteran on third persons, such as other employees.'" Presumably this would exclude also the effect on such other "third persons" as labor organizations.

Construction

ATLANTIC COAST LINE.—This railroad has authorized the construction of a rail cropping plant at South Rocky Mount, N. C., at estimated cost of $33,000. The company also has awarded contracts for the construction of a 2,093-ft. concrete slab ballast deck bridge over the Roanoke River near Norfleet, N. C., at estimated cost of $330,800, to the Somerset Company, Rocky Mount, N. C.; for the reconstruction of the warehouse and platform at Dillon, S. C., at estimated cost of $23,870, to the Powers Construction Company, Pamplico, S. C.; and for a 500-ton reinforced concrete coaling station at the Savannah Shops, Ga., at

News Department continued on next left-hand page

To Speed Reconversion

Nickel Plate 2-8-4 built by Lima

RAILROADS now equipped with modern Lima-built steam locomotives are ready to handle the heavy traffic essential to hasten industrial reconversion.

Peacetime demands, like those of war, will call for the fast delivery service that only modern motive power can provide—and the steam locomotive provides that power most economically.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

estimated cost of $91,787, to the Ogle Construction Company, Chicago.

NEW YORK, NEW HAVEN & HARTFORD.—This railroad has authorized the following projects: construction of a labor camp consisting of eight buildings, with necessary equipment, water supply and electricity, at Maybrook, N. Y., at estimated cost of $51,000; extension of the existing inspection pit and the construction and rearrangement of the tracks and water and oil line at the Dover Street yard, Boston, Mass., at estimated cost of $35,000; replacement of steam and air service lines at the Dover Street yard, at estimated cost of $28,000; and construction of a loop track, and the installation of mechanical car washing machinery with the necessary steam, water and electric service and a building to house the apparatus and employees, at South Bay, Boston, at estimated cost of $150,000.

Supply Trade

John S. King, formerly manager of the Pump division, has been appointed acting manager of the Railroad division of **Fairbanks, Morse & Co.** to succeed C. H. Wilson whose death on September 13 was reported in the *Railway Age* of September 22. **Arnold G. Brown,** assistant manager

John S. King

of the Pump division, has been appointed to succeed Mr. King as manager of that division.

Mr. King began his career as a student in the Beloit, Wis., plant. He was transferred to the Indianapolis, Ind., plant in 1921 and a year later appointed territorial representative of the Pump department in Chicago. He was appointed Pump department manager of the Chicago branch in 1930. He was appointed manager of the New Orleans, La., branch in 1937 and manager of the Pump division earlier this year.

Mr. Brown was general sales manager of the Pomona Pump Company when it was purchased a year ago by Fairbanks, Morse & Co. and soon afterwards he was appointed assistant manager of the Pump division. He was graduated with an engineering degree from Syracuse University in 1929 and traveled extensively as an engineer until 1937 when he joined the Pomona Pump Company as a junior engineer in the sales engineering department. Later he was appointed southeastern mana-

Arnold G. Brown

ger, and at the beginning of the war, transferred to New York and Philadelphia, Pa., where he was in charge of the company's government procurement contracts. He was appointed assistant sales manager in 1943 and general sales manager just before the firm was purchased by Fairbanks, Morse.

John Graham has been appointed general manager of sales of the **American Steel & Wire Co.,** U. S. Steel Corporation subsidiary. **R. F. Curtis,** formerly assistant manager of the manufacturers products division, has been appointed manager of that division to succeed Mr. Graham and **Norman Sted,** formerly in Cleveland, Ohio, district sales, has been appointed assistant manager under Mr. Curtis.

John Seagren has been appointed chief engineer in the Diesel engine division at Schenectady, N. Y., of the **American Locomotive Company.** Mr. Seagren was employed with Fairbanks, Morse & Co. from 1925 to 1932, specializing on Diesel engines and air compressors as a design engineer until he was appointed development engineer in the research and development department. He joined the Atlas

John Seagren

Imperial Diesel Engine Company as development engineer in charge of experimental and development work in 1932 and in 1936 was appointed chief engineer in charge of all experimental work and engineering in both the Oakland, Calif., and Mattoon, Ill., plants. He joined the Northern Pump Company of Minneapolis, Minn., as development engineer on post-war production in May, 1944, and remained in this position until July, 1945, when he joined the American Locomotive Company.

Joseph W. S. Davis has been appointed assistant district sales manager, New York district of the **American Locomotive Company,** with headquarters in New York. Mr. Davis has been associated with American Locomotive for the past eighteen years. Prior to his promotion he was assistant sales manager of the Railway Steel-Spring division.

W. J. Davidson and **Col. A. J. Schamehorn** have been appointed administrative engineer and assistant administrative engineer, respectively, of the new technical center of the **General Motors Corporation** at Detroit, Mich.

John S. Hutchins has been elected president of the Ramapo Ajax Division of the **American Brake Shoe Company.** Mr. Hutchins began his career with Ramapo Ajax in the operating department in 1925. He was appointed sales manager in 1941 and executive vice-president in October, 1944. **J. Brookes Spencer,** president

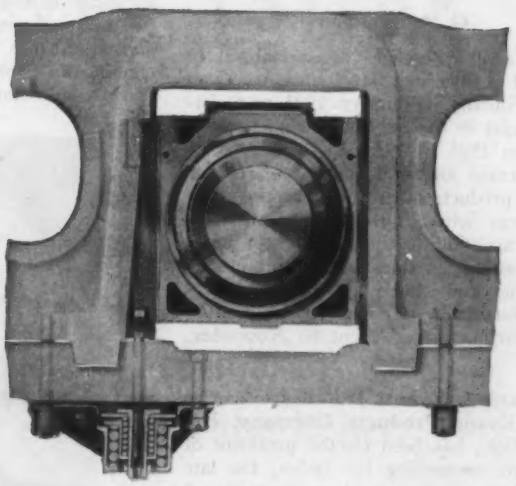
John S. Hutchins

of the division since 1936, is a vice-president of the Brake Shoe Company. He will handle special assignments in connection with railroad sales for all divisions in addition to his present responsibilities as officer in charge of the company's export division. Headquarters of the Ramapo Ajax division will be transferred from New York to 332 South Michigan avenue, Chicago.

Henry L. Guy, assistant manager of the transportation divisions at the **General Electric Company's** Erie, Pa., works, retired August 1, after more than 40 years of service with the company. Mr. Guy was graduated from Virginia Polytechnic Institute with a degree in electrical engineering in 1904. He joined General Electric in Schenectady, N. Y., in 1905, and in 1906 was transferred to what was then the foreign department as an engineering assistant. He entered the commercial branch of the old railway department at Schenectady

News Department continued on next left-hand page

SMOOTH OPERATION reduces Locomotive Maintenance



On thousands of locomotives the FRANKLIN E-2 RADIAL BUFFER is providing an ideal, non-binding connection between engine and tender.

By means of its spherical and cylindrical faces, the RADIAL BUFFER permits movement in any direction, while maintaining a predetermined frictional resistance to dampen oscillation between engine and tender.

THE FRANKLIN COMPENSATOR AND SNUBBER compensates automatically for expansion and contraction of the driving box, as well as for normal wear. It also dampens the stresses induced by reversal of forces.

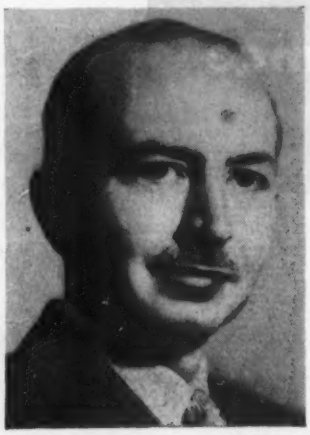
FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

in 1908, moving to Erie when the transportation department activities were consolidated there. He was appointed assistant manager of the transportation divisions in 1939. **F. H. Craton** has been appointed assistant manager to succeed Mr. Guy.

G. A. England has been appointed manager of foundry sales of the **American Car & Foundry Co.** with headquarters in New York. Mr. England attended Mis-



G. A. England

souri University where he specialized in chemical engineering. He joined American Car & Foundry in January, 1923, as assistant chemist in the St. Louis, Mo., foundry and from 1925 to 1935 was employed as chief chemist and in foundry research for foundry products of gray iron castings and chilled car wheels. In 1935 he was appointed assistant to the manager of foundries, assisting in sales and the production of castings and wheels for all of the company's foundries. He was transferred to New York as sales agent in November, 1944.

Edward S. Evans, Jr., chief executive of the **Evans Products Company,** Detroit, Mich., has been elected president of that firm, succeeding his father, the late **E. S. Evans,** whose death on September 6 was reported in the *Railway Age* of September 15. **Prewitt Semmes,** secretary

Edward S. Evans, Jr.

and general counsel, has been elected a member of the board of directors. Mr. Evans was born at Richmond, Va., and is a graduate of the University of Michigan and the University of Lausanne, Switzerland. He went to Detroit with his father in 1915 and during the ensuing years he became thoroughly grounded in every phase of the business. After holding various positions with the company he was elected vice-president and also became a member of the board of directors. In 1935 Mr. Evans was elected to the position he held at the time of his election to the presidency.

Arthur T. Stanton has been appointed general sales director of the **Master Vibrator Company,** Dayton, Ohio. Mr. Stanton helped organize the Division of Contract Distribution, one of the first war agencies, and more recently he served as chief of operations in the War Production Board's production facilities bureau.

The **Allegheny Ludlum Steel Corporation** has announced plans for the immediate erection of a $2,000,000 steel frame and brick research laboratory and experimental center at its headquarters plant, Brackenridge, Pa.

Frank R. Wood has been elected president of the **P. & M. Company, Limited,** Montreal, Que., with headquarters in Montreal. **Walter F. Wood,** who has been on military leave of absence to serve as a captain in the Canadian Infantry Corps, has been appointed secretary, with headquarters also in Montreal. Frank R. Wood entered the employ of the Rail Joint Company, a subsidiary of the P. & M. Co., in

Frank R. Wood

its London, England, office in 1907, serving that firm for two years. After a period of employment with other companies he served in the British Army during World War I, going to Canada at the close of the war to serve as secretary to the superintendent of the Canadian Pacific at Moose Jaw, Sask. In 1922 he went with the *Railway Age* as secretary to the editor. He joined the P. & M. Co., Ltd., in Montreal, in 1925, holding various positions with that concern until his recent election.

Leonard C. Doolittle has been appointed industrial hose sales engineer of the **Weatherhead Company** of Cleveland, Ohio. Major Doolittle recently returned from three years of service in the U. S. Air Corps. Before entering military service he was division sales manager of the Gates Rubber Company at Denver, Colo.

B. W. Crenshaw has been appointed sales representative of the **Scullin Steel Company** with headquarters in St. Louis, Mo. Mr. Crenshaw has been connected with Scullin Steel since 1941 as works engineer and as assistant works manager.

OBITUARY

J. C. Ogden, chairman of the board of the Robert W. Hunt Company, died September 10. He was 78 years of age.

Charles H. Wilson, manager of the railroad sales division of Fairbanks, Morse & Co., whose death in Chicago on September 13, was reported in the *Railway Age* of September 22, was born in Salem, Mass., on May 27, 1884, and received his higher education at the Armour Institute of Technology. He entered the sales department of Fairbanks, Morse in 1905, at Chicago.

Charles H. Wilson

In 1910 he was transferred to Jacksonville, Fla., remaining there until 1911, when he returned to Chicago as a member of the staff of the purchasing department. The following year he went with the International Harvester Company handling sales in northern Illinois, returning to Fairbanks, Morse in 1913, in the railway sales department, at St. Louis, Mo. He was transferred to Chicago in 1922, and in 1929 he became district manager of railroad sales at St. Louis. Mr. Wilson was promoted to manager of railroad sales, with headquarters at Chicago, in 1932, holding this position until his death.

Equipment and Supplies

FREIGHT CARS

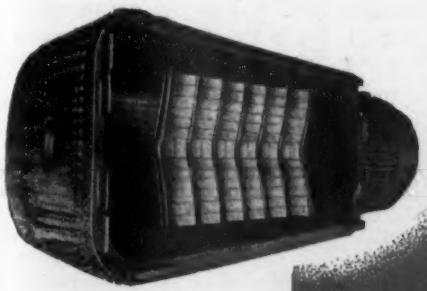
THE SOUTHERN PACIFIC has placed orders for 3,500 freight cars to cost approximately $13,900,000. Deliveries are scheduled to start early in 1946. The orders were allocated, as follows: 1,000 40½-ft. box cars to the Pressed Steel Car Company; 600 40½-ft. box cars to the Pullman-Standard Car Mfg. Co.; 750 50½-ft. auto cars and 150 70-ton covered hopper cars to the General American Transportation Corporation; 550 general service gondola cars to the Bethlehem Steel Company; 200 tight-bottom gondola cars to the Ralston Steel Car Company; and 250 70-ton open-top hopper cars to the American Car & Foundry Company.

News Department continued on next left-hand page

Vigilance

must never falter

Locomotive safety demands constant alertness of the engine crew. Water glasses and gauge cocks must be watched continually to make sure there is adequate water in the boiler.



AMERICAN ARCH COMPANY, INC.

NEW YORK · CHICAGO

SECURITY CIRCULATOR DIVISION

The CANADIAN NATIONAL has ordered 500 steel box cars of 50 tons' capacity from the Eastern Car Company. Production of the cars will begin as soon as deliveries are completed on 500 similar units ordered by the railroad in March.

The CHICAGO & NORTH WESTERN has placed orders for 2,400 freight cars of various types, 400 of which will be allotted to the Chicago, St. Paul, Minneapolis & Omaha, a part of the North Western system. The entire purchase will cost approximately $7,500,000. Of the 2,000 cars ordered for the North Western, 800 are fifty-ton 40-ft. 6-in. box cars to be built by the General American Transportation Company at East Chicago. Another order for 500 50-ton, 50-ft. 6-in. box cars has been placed with the Pullman Standard Car Manufacturing Company. The Mt. Vernon Car Manufacturing Company at Mt. Vernon, Ill., has received an order to build 300 50-ton, 53-ft. 6-in. flat cars while an order for 8 70-ton steel gondola cars has been given to the Bethlehem Steel Company at Johnstown, Pa., of which 400 have been ordered for the Omaha.

SIGNALING

The GULF, COLORADO & SANTA FE has placed orders with the Union Switch & Signal Co. covering materials for the installation of a single track automatic block "overlap" signal system between Brownwood, Tex., and Buffalo Gap, approximately 78 miles; involving H-5 searchlight signals, U-5 switch circuit controllers, rectifiers, transformers, relays, housings, etc. The field work will be done by railroad forces.

The NEW YORK CENTRAL, LINES WEST, has ordered equipment from the General Railway Signal Company for Type FM10 coded remote control of an all-relay interlocking at Ashtabula, Ohio. The control machine will be installed in Tower W, 2.4 miles from the interlocking, and will be equipped with 14 track indication lights, six switch levers, and 10 signal levers to control 10 switch machines and 10 signals. Model 5D dual-control switch machines, Type F dwarf signals, and Type B plug-in relays will be used in this installation.

The CHICAGO, ROCK ISLAND & PACIFIC has placed an order with the Union Switch & Signal Co. for the signal materials required for the installation of centralized traffic control between Caldwell, Kan., and El Reno, Okla., covering 108 miles of single track. This installation will constitute an extension of C.T.C. from Herington, Kan., to Caldwell, a distance of 123 miles for which the material was ordered early in the year. A Style C control machine will control the entire territory which will cover 231 miles when both sections are in service, with coded track circuits employed throughout. Besides the control machine, the order includes the required Style H-2 searchlight high and dwarf signals, Style M-22B dual-control electric switch movements, Style SL-21 electric switch locks, with office and field coding units, relays, transformers, rectifiers and housings. The field construction will be done by the railway forces.

Financial

BALTIMORE & OHIO.—*Hearing Concluded.*—On September 21 the federal court at Baltimore, Md., took under advisement the B. & O.'s $500,000,000 debt adjustment plan and denied a motion by Randolph Phillips, of New York, a B. & O. bondholder, to dismiss the petition on grounds of collusion, fraud and non-compliance with the statute. Previously Mr. Phillips had presented a set of modifications to the plan should the court find it was filed in good faith. The court ordered the railroad to file a brief within three weeks and Mr. Phillips to submit a reply by November 5.

BANGOR & AROOSTOOK. — *Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue $436,800 of promissory notes in connection with its purchase under conditional sales agreements of one hundred 40-ton box cars, being constructed by the Magor Car Corporation at a cost of $3,556 each, and fifty 70-ton hopper cars, being built by the Bethlehem Steel Company at a cost of $3,794 each.

CHICAGO, BURLINGTON & QUINCY.—*Seeks Bids on Interest Costs.*—This road has invited bids for the lowest interest cost on $2,836,800 equipment financing to provide 80 per cent of the purchase price of 10 new Diesel-electric locomotives for freight service.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—*Reorganization Plan.*—Division 4 of the Interstate Commerce Commission has submitted to four classes of creditors of this road, for their acceptance or rejection, its plan for its reorganization as approved by the federal court. Ballots are receivable on or before November 13, except when mailed outside the United States. Holders of the old company's refunding mortgage bonds and first and general mortgage bonds, of Indianapolis & Louisville first mortgage bonds, and of certain secured promissory notes, are entitled to vote on the plan.

ERIE.—*Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue promissory notes in further evidence of the unpaid portion of the cost of certain equipment purchased under conditional sales agreements, as follows: $1,890,000 for 700 50-ton box cars bought from the American Car & Foundry Company at $3,465 each; $1,848,000 for 600 70-ton gondolas bought from the Bethlehem Steel Company at $3,853 each; and 100 70-ton covered hopper cars bought from the Greenville Steel Car Company at $4,430 each.

ERIE.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to purchase from the Cleveland & Pittsburgh and the Pennsylvania, lessee, for $40,000 a line from Brady Lake, Ohio, to Ravenna, about 3 miles, which it has operated under lease.

NEW YORK, NEW HAVEN & HARTFORD.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $1,421,500 of promissory notes in further evidence of the unpaid portion of the purchase price of 500 50-ton box cars bought, under a conditional sale agreement with the Pullman-Standard Car Manufacturing Company, at a cost of $1,776,965. The notes have been sold on a 1.63 per cent interest basis to the Irving Trust Company of New York.

NORTHERN PACIFIC.—*Bonds.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $55,000,000 of 4½ per cent collateral trust bonds, due in 1975, sold at 98 to Morgan Stanley & Company and others, the proceeds of which, with other funds, are to be applied to the redemption of $81,161,600 of series B refunding and improvement mortgage 6 per cent bonds, due in 2047 and callable at 110. At the same time, the division approved the authentication of $82,500,000 of series E 4 per cent refunding and improvement mortgage bonds due in 2047, to be pledged as security for the collateral trust issue. (Previous item in *Railway Age* of September 1, page 390.) The estimated saving to be effected by the refunding over a 40-year period is $96,675,938. Cash requirements to be met with treasury funds total $35,755,810. The company's net mortgage indebtedness will be reduced $26,161,600, "a substantial amount," in the words of the division report.

PERE MARQUETTE.—*Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue $438,200 of promissory notes in connection with its purchase under conditional sales agreements of ten 1,000-hp. Diesel-electric switching locomotives from the Electro-Motive Division of General Motors Corporation at a cost of $78,550 each.

PENNSYLVANIA.—*Refunding.*—The Pennsylvania, Ohio & Detroit, which is operated by the Pennsylvania and controlled by the Pennsylvania system through stock ownership, has applied to the Interstate Commerce Commission for authority to issue $32,602,000 of series E first and refunding mortgage bonds, of which $31,873,000 will be sold publicly by competitive bidding and $729,000 will be bought by the Pennsylvania's insurance fund. With the proceeds and other funds to be supplied by the Pennsylvania, which at the same time sought authority to guarantee the new issue, the company proposes to redeem, at 107½, $3,943,000 of series B and $729,000 of series C 4½ per cent first and refunding mortgage bonds and, at 105, $27,930,000 of series D 3¾ per cent first and refunding mortgage bonds.

PITTSBURGH & WEST VIRGINIA.—*Pledge of Securities.*—This company has applied to the Interstate Commerce Commission for authority to pledge certain first mortgage bonds as collateral for a $1,000,000 short-term bank loan obtained from the Mellon National Bank of Pittsburgh.

READING.—*Merger of Subsidiaries.*—The Reading and 11 subsidiary companies, all of which it controls by ownership of more than two-thirds of the outstanding capital stock, have applied to the Interstate Commerce Commission for authority to merge

News Department continued on next left-hand page

Good Boiler Performance Is Essential to Good Locomotive Performance

THE
SUPERHEATER
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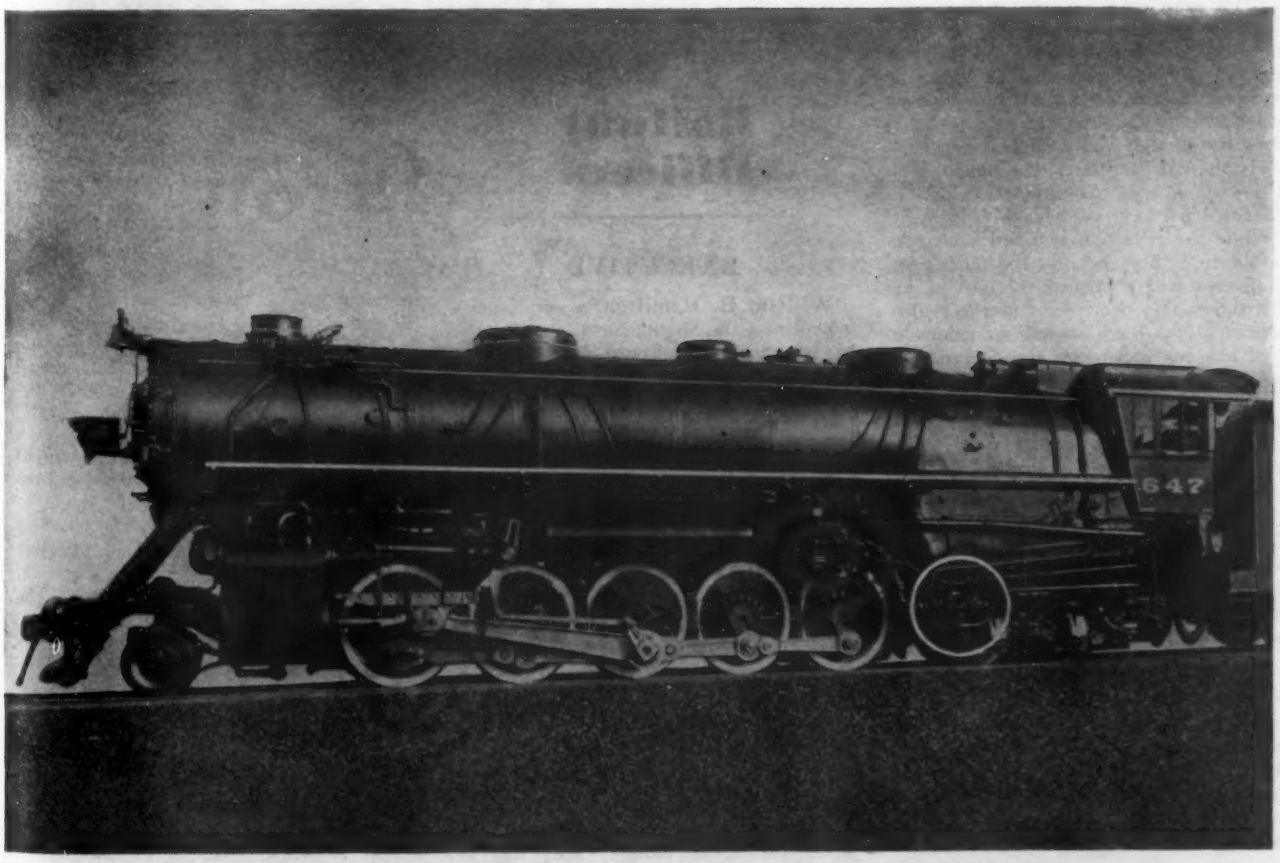
Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave., CHICAGO
Montreal, Canada, THE SUPERHEATER COMPANY, LTD.

ELESCO

Boiler performance and efficiency are measured by pounds of water evaporated per pound of fuel. Preheating the boiler feedwater with waste heat improves boiler efficiency by increasing capacity for the same fuel consumption . . . or by increasing water evaporated per pound of fuel.

A practical means for accomplishing this improvement is through the Elesco exhaust steam injector. This device utilizes exhaust steam from the cylinders to heat the feedwater and to aid in pumping it into the boiler.

(A-1271-A-1740)



Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • American Throttles

the subsidiaries into the parent company, thus simplifying the system capital structure. Outstanding minority stock of some of the subsidiaries would be acquired by purchase at specified prices, and the Reading would assume liability for certain outstanding bonds of seven of the subsidiary companies. The following companies would be absorbed: Allentown Railroad; Colebrookdale Railroad; Gettysburg & Harrisburg Railway; North East Pennsylvania Railroad; Peoples Railway; Perkiomen Railroad; Philadelphia & Chester Valley Railroad; Philadelphia, Newtown & New York Railroad; Pickering Valley Railroad; Reading & Columbia Railroad; and Stony Creek Railroad.

SOUTHERN PACIFIC.—*Refinancing.*—Division 4 of the Interstate Commerce Commission has authorized the Southern Pacific Railway to issue $25,000,000 of series A, $50,000,000 of series B, $50,000,000 of series C, and $25,000,000 of series D first mortgage bonds, due respectively in 1961, 1986, 1996 and 1996. All the new issues have been sold at 98, the first three to Kuhn, Loeb & Company and others, and the series D to the Southern Pacific Company, the annual interest rates being 2⅞ per cent on the series A and 3¼ per cent on the others. The proceeds and other funds are to be used to redeem at 105 $159,459,000 of first refunding mortgage 4 per cent gold bonds, due in 1955, of which $15,985,500 are held by the Southern Pacific Company and $143,473,500 by the public. (Previous item in *Railway Age* of August 25, page 352.)

At the same time, the division authorized the Southern Pacific Company to guarantee the new issues as to principal and interest; to pledge as collateral under the mortgage $21,328,000 of Arizona Eastern first and refunding mortgage bonds and $4,698,000 of first and refunding mortgage bonds and 232,700 shares of common stock of the El Paso & Southwestern; and to sell the 4 per cent gold bonds held by it.

While the reduction in interest charges for the first 10 years after the refinancing is effected will not equal the cost of the transaction, the companies expect to realize substantial tax savings and reductions in fixed charges because of the operation of sinking funds and anticipated future retirements. In addition, there will be an immediate reduction of $18,473,500 in the amount of fixed-interest bonds in the hands of the public. In the past 5½ years, the division's report pointed out, the Southern Pacific system funded debt (other than equipment obligations) and bank loans have been reduced $197,617,175, or 27.6 per cent, and annual interest charges on publicly-held debt and equipment paper have been reduced $7,662,686, or 24.7 per cent.

UNION PACIFIC.—*Awards Bonds.*—On September 26, the Union Pacific awarded its $81,602,000 issue of new refunding mortgage 3 per cent bonds, due 1990, in close bidding competition, to Halsey, Stuart & Co., and associates, at 103.3599. The bonds were re-offered at 104 and quickly oversubscribed.

VALLEY & SILETZ.—*Capital Adjustment.*—Division 4 of the Interstate Commerce Commission has authorized this company to reduce its capital stock from $1,000,000 to $640,000 by changing the par value per share from $100 to $64.

WHEELING & LAKE ERIE.—*Bonds.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $6,000,000 of series A 2¾ per cent general and refunding mortgage bonds, due in 1992, which have been sold at 98.099 to the Mellon Securities Corporation and others. The proceeds and other funds are to be used to redeem at par $943,000 of series E 2⅛ per cent refunding mortgage serial bonds and, at 103, $5,250,000 of series F 3⅛ per cent refunding mortgage bonds due in 1966. In addition to a tax saving, a reduction of $304,903 in interest charges is expected to result from the refinancing. In reviewing its current cash position, the company stated that, if traffic conditions warrant, it may be necessary in 1946 to purchase 1,000 box cars and perhaps 1,000 gondolas.

Dividends Declared

Belt RR. & Stockyards.—common, 50¢; 6% preferred, 75¢; both quarterly, both payable October 1 to holders of record September 20.

Carolina, Clinchfield & Ohio.—$1.25, quarterly, payable October 20 to holders of record October 10.

Norfolk & Western.—adj. preferred, $1.00, quarterly, payable November 10 to holders of record October 17.

Pere Marquette.—prior preferred, $1.25, accum., payable November 1 to holders of record October 5.

Reading.—25¢, quarterly, payable November 8 to holders of record October 11.

Average Prices Stocks and Bonds

	Sept. 25	Last week	Last year
Average price of 20 representative railway stocks	58.10	55.98	40.65
Average price of 20 representative railway bonds	97.71	96.86	88.96

Railway Officers

EXECUTIVE

William H. Hamilton, general superintendent of the Montour at Corapolis, Pa., has been appointed vice-president, engineering, with general supervision over construction and maintenance of fixed property, real estate, material purchases and stores. His headquarters remain the same.

R. J. Morfa, assistant to the chairman of the board of the Chesapeake & Ohio at Cleveland, Ohio, and vice-president of the New York, Chicago & St. Louis, has severed his connections with these and affiliated companies, and has been elected chairman of the board and a director of the Missouri-Kansas-Texas with headquarters at St. Louis, Mo., succeeding **Lewis E. Pierson,** who remains as a director of the M-K-T. **Donald V. Fraser,** executive assistant to the chairman at St. Louis, has been elected vice-president.

Carl R. Smith, whose appointment as assistant to the president of the Bangor & Aroostook at Bangor, Me., was announced in the *Railway Age* of August 25, was born at Exeter, Me., on February 11, 1888, and attended Colby College. After a brief venture into storekeeping, Mr. Smith became a farmer and prior to his election as commissioner of agriculture for the State of Maine on January 1, 1941, he owned and operated several farms. He has served in various executive positions with several farm and forestry organizations, and he resigned as commissioner of agriculture to become assistant to the president of the Bangor & Aroostook.

Brig. Gen. Paul W. Johnston, whose election as vice-president of the Erie at Cleveland, Ohio, was announced in the *Railway Age* of September 8, was born at Transfer, Pa., on July 5, 1892, and attended Allegheny College and Boston University. He entered railroading in 1929 as an agent of the Erie, serving successively as station supervisor, rules examiner, chief clerk, trainmaster, and assistant superintendent of

Halle Portrait Studio

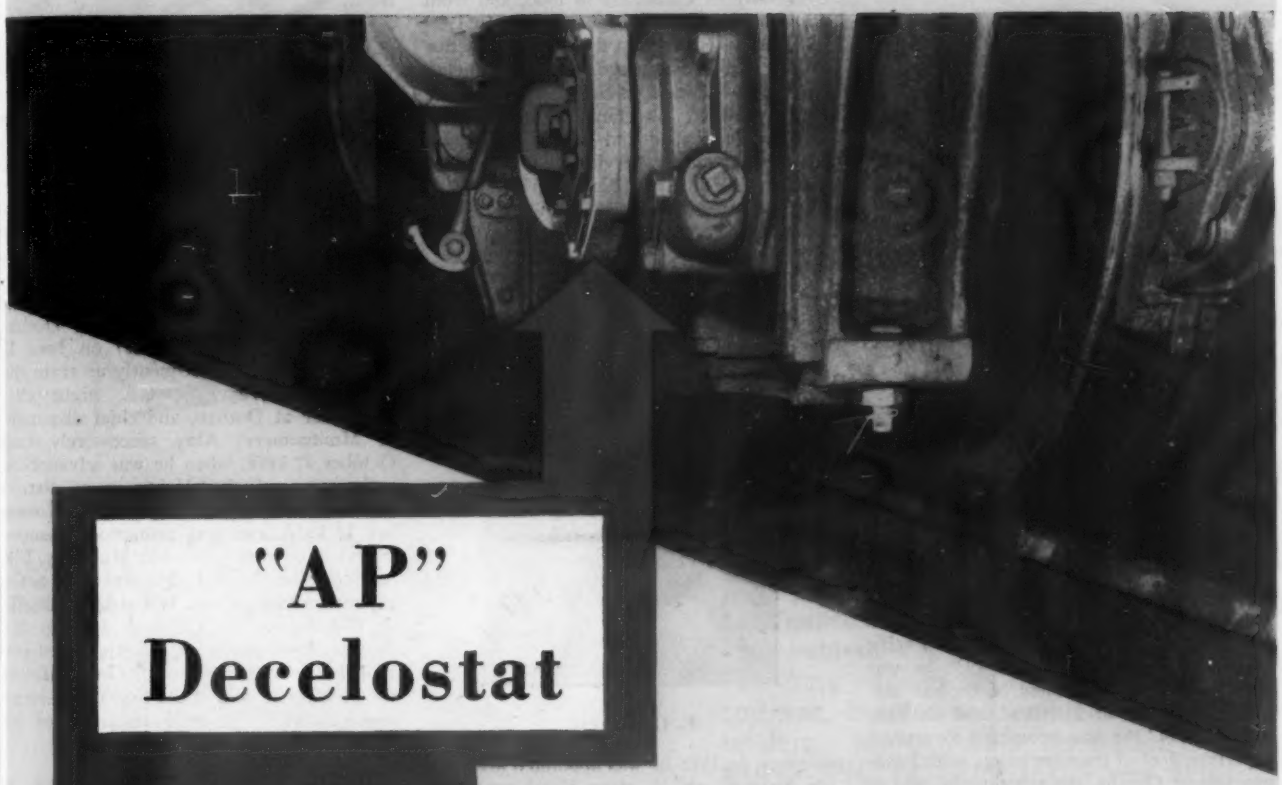
Paul W. Johnston

transportation until 1933, when he was promoted to superintendent of transportation. In 1935 he was named assistant general manager, and in 1938 he was appointed assistant to the vice-president. The following year he was advanced to general manager, and he was serving as assistant vice-president in 1942, when he was furloughed for military service. General Johnston, who had attained the rank of brigadier general, had served in the Far East on the staff of General Douglas MacArthur before returning to the Erie as vice-president.

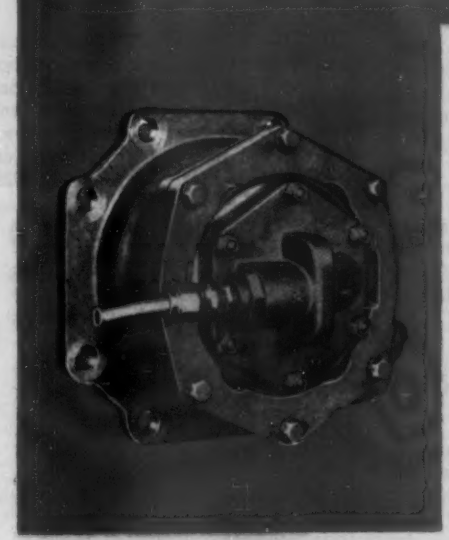
Alton H. Cooke, commercial agent of the Southern at Jacksonville, Fla., has been promoted to assistant to vice-president of the Georgia Southern & Florida (part of the Southern) at Macon, Ga., effective October 1. Mr. Cooke was born at Whitakers, N. C., on November 4, 1906, and attended the University of North Carolina. He entered railroading with the Southern as a clerk-stenographer at Norfolk, Va., in September, 1925, and subsequently served in various clerical and secretarial capacities at Sheffield, Ala., and at Washington, D. C. He was promoted to secretary to the vice-president (traffic) at Washington in October, 1938, and was appointed special traffic representative at Camp Blanding, Fla., in October, 1940. In April, 1941, he was named commercial agent at Jacksonville, the post he will leave on October 1 to become assistant to vice-

News Department continued on next left-hand page

Sentry on Wheels



"AP" Decelostat



Softens the Brake When Wheel Slip Impends

THE Decelostat is a sentry that is always at its post—on the wheel—ever on the lookout for irregularity in wheel-rail adhesion.

When brakes are applied it measures rate of retardation. If slippery rail is encountered the Decelostat won't let the wheel slip into a slide. It eases up on the brake, promptly—before the slide can develop. This is done in less than a second.

Braking pressure is softened—but only for the moment, and only on the affected wheels. Then the braking pressure is restored to the existing train level.

Westinghouse Air Brake Company

Wilmerding, Pa.

president of the Georgia Southern & Florida.

Perry J. Lynch, whose promotion to vice-president, operations, of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of September 8, was born at Helena, Mont., on

Perry J. Lynch

February 24, 1896. He entered railway service in 1910 as an office boy of the Union Pacific at Portland, Ore., subsequently holding various positions until 1918 when he received a leave of absence to serve in the armed forces during World War I. Mr. Lynch returned to the Union Pacific when the war ended and in 1931 he was advanced to superintendent of the car service department at Portland, and on February 1, 1942, he was promoted to general superintendent of transportation, with headquarters at Omaha, the position he held at the time of his new appointment.

Edwin C. Matthias, general attorney, Lines West, of the Great Northern at Seattle, Wash., has been elected vice-president and general counsel, with headquarters

Edwin C. Matthias

at St. Paul, Minn., succeeding **F. G. Dorety,** who has retired after 37 years of service.

Mr. Matthias is a graduate of Stanford University and entered railway service in 1912 as a law clerk of the Great Northern, with headquarters at Spokane, Wash. In 1914 he resigned to enter private practice in Spokane, and six years later he returned to the Great Northern as an attorney at Seattle. In 1926 Mr. Matthias was promoted to attorney for western Washington, with the same headquarters, and in 1937 he was advanced to the position he held at the time of his new appointment.

Mr. Dorety was born at Boston, Mass., on July 20, 1878, and graduated from the University of California in 1900, and from the Harvard Law School in 1903. In 1904 and 1905 he engaged in the general practice of law in San Francisco, Cal., and during the next two years in Seattle. In 1908 he was appointed assistant United States attorney in Seattle and in the same year he entered railway service as an assistant attorney of the Great Northern at Seattle, where he remained until 1910, when he was promoted to attorney, with the same head-

F. G. Dorety

quarters. In 1915 he was appointed attorney for Oregon and Western Washington, in 1918 he was promoted to assistant general counsel, with headquarters at St. Paul, and four years later he was again promoted to general solicitor. In October, 1926, he was elected to the position he held at the time of his retirement.

C. McD. Davis, president of the Atlantic Coast Line, has been elected to the board of directors of the Louisville & Nashville, succeeding **George B. Elliott,** who has resigned.

FINANCIAL, LEGAL AND ACCOUNTING

Edward C. Lanhan has been appointed assistant secretary and assistant treasurer of the Western Maryland at Baltimore, Md.

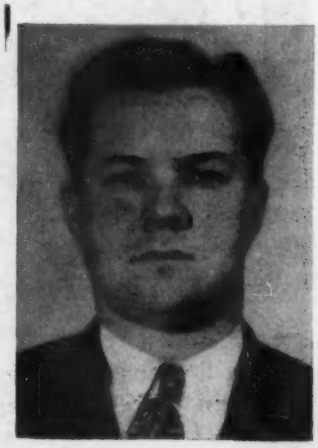
R. H. Postans, auditor of miscellaneous accounts of the Canadian Pacific at Montreal, Que., has retired because of ill health, and **E. V. Neville,** auditor of joint facilities at Montreal, has been named to succeed him. **Howard C. Reid,** general statistician, has been promoted to auditor of joint facilities, and **G. M. Rountree,** statistician, has been advanced to general statistician.

A. L. Janes, assistant general attorney of the Great Northern, with headquarters at St. Paul, Minn., has retired after 32 years of service. He is a graduate of the University of Minnesota and Harvard University and practiced law from 1905 to 1911. In the latter year he became attorney general for the State of Minnesota, and in 1913 he entered railway service as an attorney of the Great Northern. Five years later Mr. Janes was promoted to assistant general solicitor, with headquarters at St. Paul, and in 1922 he was advanced to the position he held at the time of his retirement.

OPERATING

S. E. Jones, whose appointment as general manager of the Rockingham and the East Carolina (subsidiaries of the Atlantic Coast Line) with headquarters at Rockingham, N. C., and Farmville, was announced in the *Railway Age* of September 1, was born at Bluffton, Ga., on April 15, 1890, and entered railroading with the Atlantic Coast Line as a telegraph operator at River Junction, Fla., on March 3, 1908. He was promoted to train dispatcher at Dothan, Ala., (Montgomery district) on June 12, 1914, and served subsequently as train dispatcher at Waycross, Ga., night chief dispatcher at Dothan, and chief dispatcher at Montgomery, Ala., successively until October 7, 1925, when he was advanced to trainmaster of the Montgomery district. He transferred to Sanford, Fla., on November 1, 1927, and was promoted to superintendent of mine service at Mulberry, Fla., on September 1, 1934. He served as acting superintendent of the Wilmington district at Wilmington, N. C., from June to November, 1944, when he was appointed personnel assistant with the same headquarters, the position he held at the time of his recent appointment as general manager of the Rockingham and the East Carolina.

D. T. Hart, whose appointment as superintendent passenger transportation of the New York Central line west of Buffalo (N. Y.), with headquarters at Cleveland, Ohio, was announced in the *Railway Age* of September 8, entered the service of the New York Central on June 30, 1925, as



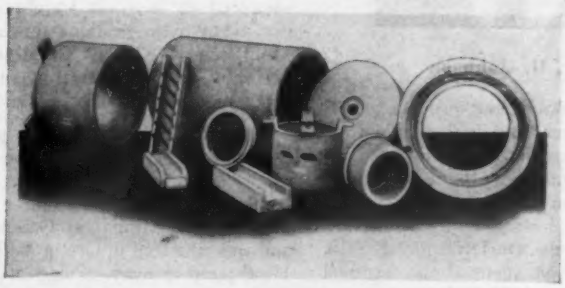
D. T. Hart

clerk on the Hudson division, coming to the passenger transportation department at New York on May 2, 1926, as stenographer. On August 1, 1938, Mr. Hart was appointed supervisor passenger equipment distribution at New York, remaining in that position until March 1, 1943, when he was furloughed to the United States War Department to render service in connection with

News Department continued on next left-hand page

SOO LINE has known a good thing—

HSGI Vital Parts



HSGI parts may be had rough, semi-finished, or finished. Some of the most widely used locomotive components here shown include valve and cylinder bushings, packing and bull rings; crosshead shoes; driving box shoes and wedges; pistons; side rod bushings.

A SLICK performer in its day was old 808, but the Soo Line's modern 4-8-4's with their high monthly averages and impressive tonnage records leave that veteran completely in the shade. Yet these engines do have something in common, besides the emblem on their tenders. More than a generation ago HUNT-SPILLER GUN IRON was helping to maintain Soo Line locomotives at peak efficiency. And today, though conditions are changed and power greatly improved, this same long-wearing material continues to fulfill the exacting requirements of that great Middle-Western road.

Clinching proof of quality for any product is the long-time loyalty of its users, and we are proud that 76 important railroads have been specifying HSGI parts since 1910 or before.

HUNT SPILLER GUN IRON HSGI *AIR FURNACE PROCESS*

HUNT-SPILLER MFG. CORPORATION

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Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
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Cylinder Bushings	Crosshead Shoes	Dunbar Sectional Type Packing
Cylinder Packing Rings	Hub Liners	Duplex Sectional Type Packing
Pistons or Piston Bull Rings	Shoes and Wedges	for Cylinders and Valves
Valve Bushings	Floating Rod Bushings	(Duplex Springs for Above
Valve Packing Rings	Light Weight Valves	Sectional Packing)
Valve Bull Rings	Cylinder Liners and Pistons	Cylinder Snap Rings
	for Diesel Service	Valve Rings, All Shapes

the handling of equipment. Returning to the passenger transportation department of the Central at New York on January 1, 1945, Mr. Hart was appointed supervisor of passenger service, the position he was maintaining at the time of his recent promotion to superintendent passenger transportation.

C. W. Pace, assistant general superintendent of transportation of the Missouri Pacific at St. Louis, Mo., has been promoted to general superintendent of transportation, with the same headquarters. **C. A. Fink,** general superintendent of the Southern district at Little Rock, Ark., has been advanced to assistant general superintendent of transportation, with headquarters at St. Louis, succeeding Mr. Pace, and **J. Davis,** general superintendent of the Western district at Kansas City, Mo., has been transferred to the Southern district relieving Mr. Fink. **E. Sullivan** has been appointed general superintendent of the Western district, replacing Mr. Davis.

Harvey E. Shumway, whose promotion to general superintendent of transportation of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of September 8, was born at Atchison, Kan., on June 14, 1898, and entered railway service on July 1, 1917, as a clerk of the U. P., at North Platte, Neb. He subsequently served in various capacities until September 1, 1930, when he was advanced

Harvey E. Shumway

to trainmaster, with headquarters at North Platte, and in April, 1937, he was promoted to assistant division superintendent at Omaha. On September 15, 1941, Mr. Shumway was advanced to division superintendent at Denver, Colo., and two years later he was transferred to Omaha. In April of this year he was promoted to general superintendent of the Kansas-Colorado divisions, with headquarters at Kansas City, Mo., the position he held at the time of his new appointment.

TRAFFIC

J. E. Wells, district freight agent of the Minneapolis & St. Louis at Oskaloosa, Iowa, has been promoted to general agent, with the same headquarters.

J. F. Ramsey, district passenger agent of the Southern at Columbia, S. C., has been named division passenger agent there, and **T. L. Reed** has been named to succeed him.

Searcy H. Johnson, whose appointment as general passenger agent of the Southern at Birmingham, Ala., was announced in the *Railway Age* of September 8, was born at Cullman, Ala., on May 25, 1883, and attended Polytechnic College at Cullman from 1895 to 1898. On July 1, 1910, he entered railroading with the Alabama Great

Searcy H. Johnson

Southern (part of the Southern) as assistant city passenger and ticket agent at Birmingham, where he has maintained his headquarters throughout his career. On July 1, 1911, he was promoted to city ticket agent, and the following April he became city passenger agent. On December 1, 1918, he was named ticket agent at the terminal station, and in May, 1923, he was advanced to traveling passenger agent. Mr. Johnson was promoted to district passenger agent on September 1, 1925, and on June 1, 1935, became assistant general passenger agent, the position he held at the time of his recent elevation to general passenger agent.

George Stradtman, assistant general passenger agent at Savannah, has been elevated to general passenger agent, and **H. S. Olliff,** city passenger agent here, has been named division passenger agent. **O. Bledsoe, W. W. Hackett,** and **S. C. Harris,** division passenger agents at Atlanta, Macon, Ga., and Columbus, respectively, have been promoted to assistant general passenger agents with the same headquarters. **W. L. Richardson,** passenger service agent at Atlanta, succeeds Mr. Bledsoe as division passenger agent.

Royce A. Hoyle, division freight agent of the Central of Georgia at Savannah, Ga., has been promoted to assistant freight traffic manager there, a newly created position; and **J. R. Stanfield,** commercial agent, has been named to succeed him as division freight agent. **Frank M. Tuttle,** division freight agent at Atlanta, Ga., has been appointed assistant freight traffic manager with the same headquarters. **J. B. Norman,** commercial agent, has been named assistant freight traffic manager, with headquarters as before at Birmingham, Ala. **J. L. Bacon,** commercial agent at Albany, Ga., has been promoted to the newly-created position of division freight and passenger agent there. **P. L. Barrett,** Florida freight and passenger agent at Jacksonville, Fla., has been advanced to Florida freight traffic manager with the same headquarters. In the Washington, D. C., office, **Alan Browning,** general eastern traffic agent, has been appointed to the new position of eastern traffic manager, and **Mike Powell,** commercial agent, has been advanced to general agent.

A. C. Stenberg, general western freight agent of the Duluth, South Shore & Atlantic at Seattle, Wash., has been promoted to assistant traffic manager, with headquarters at Marquette, Mich.

Randall D. Klein, commercial agent of the St. Louis Southwestern at St. Louis, Mo., has been promoted to general agent, with headquarters at Cleveland, Ohio, succeeding **W. C. Huxhold,** who has been transferred to Pittsburgh, Pa.

Robert M. Martin, northwestern traffic agent of the Central of Georgia at Chicago, has been promoted to western freight traffic manager, with the same headquarters. The position of northwestern traffic agent has been abolished. **Frank J. Chapman,** commercial agent, has been advanced to division freight and passenger agent ,with headquarters as before at Montgomery, Ala. **E. Candler Jones** has been appointed gulf coast agent, with headquarters at New Orleans, La.

John P. Heavers, whose promotion to assistant traffic manager of the Minneapolis & St. Louis, at Chicago, was reported in the *Railway Age* of September 8, was born in St. Paul, Minn., on October 26, 1906, and was educated in Cretin Military School. He entered railway service on June 1, 1923, in the traffic office of the Minneapolis, St. Paul & Sault Ste. Marie, at St. Paul. Two years later he went with the Minneapolis & St. Louis in the freight traffic office as chief clerk at St. Paul. He was advanced to city passenger agent at St. Paul in Octo-

John P. Heavers

ber, 1929, being transferred to Minneapolis the following January. On June 1, 1931, he was promoted to traveling freight agent at Cleveland, Ohio, where he remained until he was transferred to Chicago two years later. He was promoted to general agent at Cincinnati, Ohio, in September, 1935, serving in that capacity there and at Atlanta, Ga., and Chicago, until November,

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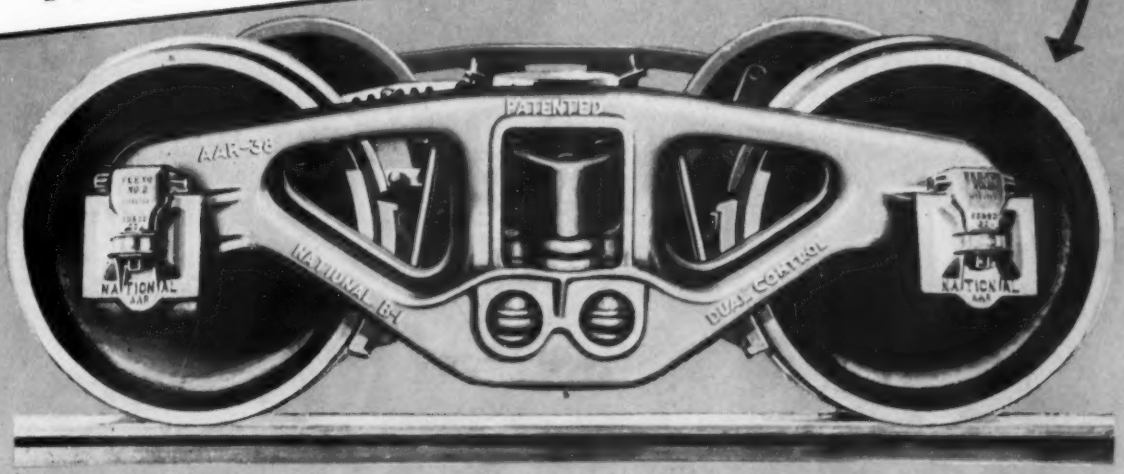
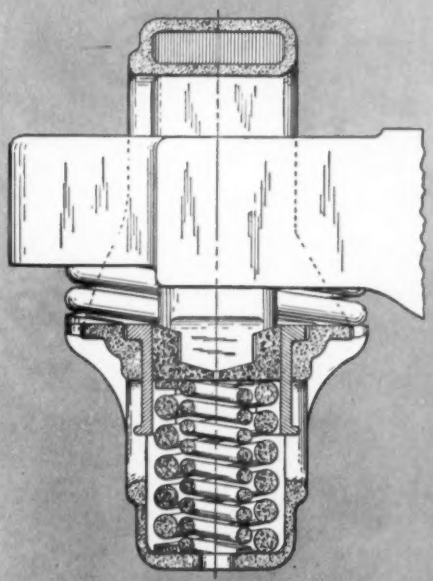
The Truck For Smooth, Safe Riding



No Spring Plank

No spring plates

Quick Wheel Change



Section thru Control Unit

A smooth riding car means less damage to lading and longer life for equipment.

The National B-1 Truck has four control units (two in each side frame) which control "spring bounce" and forces which tend to throw trucks out of square.

Cars equipped with National B-1 Trucks with Dual Control can be speeded up with Safety.

Smoother riding and Fewer Parts assure lower maintenance costs.

* * *

The truck for Post-war high-speed freight service.

National B-1 with Dual Control.

Specify National B-1 Trucks with Dual Control to keep cars "on the go"

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND. OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
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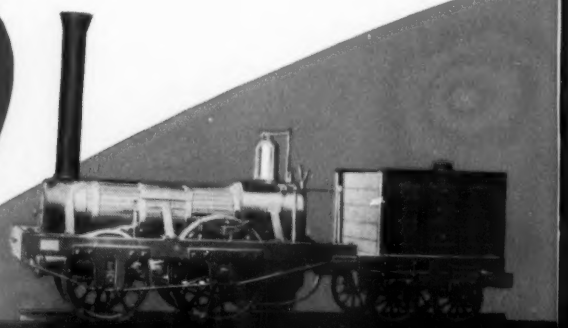
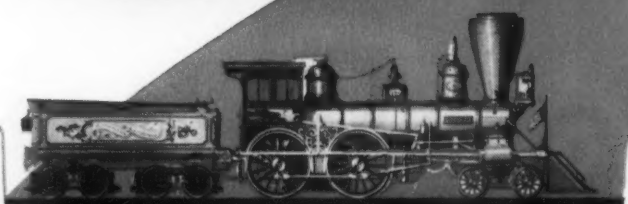
BALDWIN

MILEPOST in AMERICAN RAILROADING



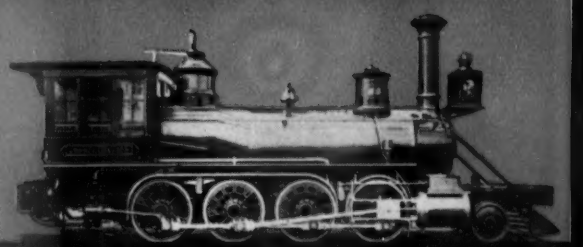
1832

OLD IRONSIDES, Matthias W. Baldwin's first railroad locomotive.



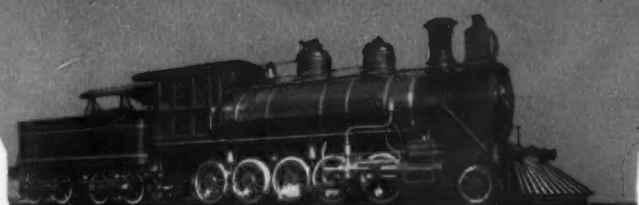
56

THE TIGER, an outstanding type of its day, built for the Pennsylvania Railroad.



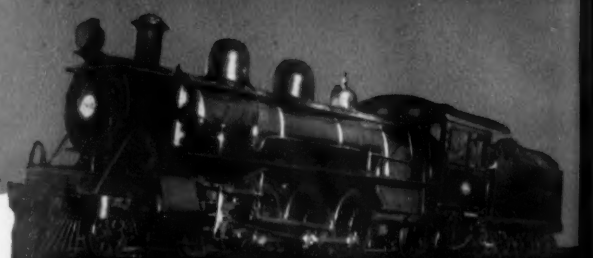
1866

FIRST "CONSOLIDATION", a type which soon achieved world-wide popularity.



85

FIRST "DECAPOD", built for Brazil, but later a popular type in the United States.



1901

FIRST "PACIFIC" TYPE, practically the standard passenger locomotive for thirty years.

906

FIRST MAJOR ELECTRIFICATION on the New Haven used Baldwin-Westinghouse locomotives like this.

To read the history of Baldwin is to review the history of the American railroads, whose tracks had reached the modest figure of only 250 miles in 1832 when "old Ironsides" was built. Many locomotive types, which in later years became virtually rail-

1937

EARLY STREAMLINER used by the Santa Fe in steam-operated, cross-continental passenger service.

1942

THE "T-1" DUPLEX, an outstanding, present-day steam locomotive type offering many advantages for both freight and passenger service.

1944

THE "S-2" STEAM TURBINE LOCOMOTIVE, first gear-driven engine of this type in America, opening the way to new conceptions of steam motive power.

1945

DIESEL-ELECTRIC MAINLINER, the most recent development in this field for both freight and passenger service.

road standards, came first from the Baldwin shops.

That is but the beginning of the story. New locomotive types and further improvements and refinements of old types, to meet the ever-changing railroad picture, will fill the chapters still to be written.

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BALDWIN

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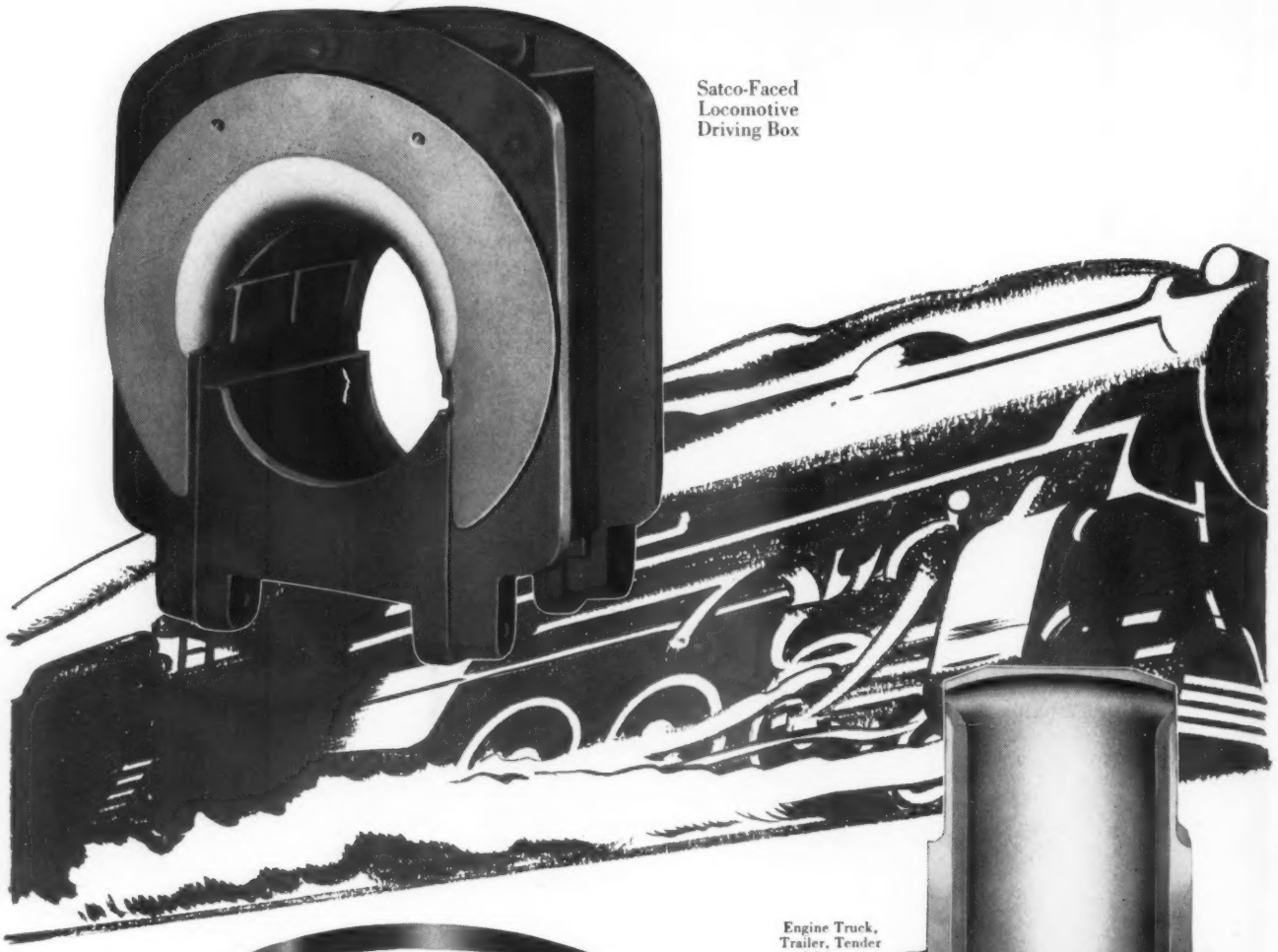
Offices: Philadelphia, New York, Boston, Chicago, St. Louis, Washington, San Francisco, Detroit, Cleveland, Houston, Pittsburgh.



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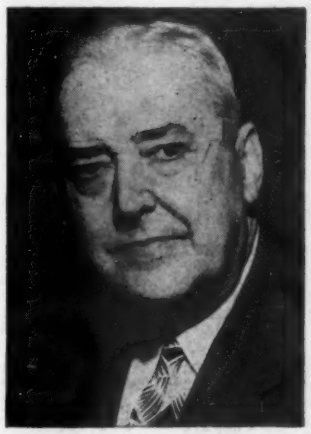
CHICAGO NEW YORK

1942, when he was named assistant general freight agent at the latter point, the position he was holding at the time of his recent promotion.

L. E. Newman, general agent of the Erie at Minneapolis, Minn., has been promoted to foreign freight agent, with headquarters at Chicago, succeeding **A. E. Peterson,** whose retirement was reported in the *Railway Age* of June 2.

Bruce C. Pate, chief clerk to the passenger traffic manager of the Alton at Chicago, has been promoted to general agent, passenger department, with headquarters at St. Louis, Mo. **Daniel M. McNamara,** assistant general passenger agent, with headquarters at St. Louis, has retired after 50 years of service.

Reuben H. Graham, whose appointmentment as general passenger agent of the Southern at Charlotte, N. C., was announced in the *Railway Age* of September 8, was born at Salisbury, N. C., on July 13, 1880, and entered railroading on July 1, 1899, as assistant baggage agent of the Southern at Asheville, N. C. In September, 1900, he was promoted to baggage agent, and in May, 1902, he became depot ticket agent, being named ticket agent two years later. On April 1, 1911, Mr. Graham was appointed city passenger and ticket agent at Asheville, and one year later he was ad-



Reuben H. Graham

vanced to traveling passenger agent at St. Paul, Minn. After serving subsequently at Asheville, Charlotte, and Minneapolis, Minn., he was appointed district passenger agent at Minneapolis in February, 1917, transferring to Spartanburg, S. C., in January, 1918. The following February he went to Greenville, S. C., as division passenger agent, and in March, 1919, he returned to Charlotte in the same capacity. He was appointed assistant general passenger agent at Charlotte in July 1941, remaining in that post until his recent elevation to general passenger agent there.

J. Charlton Greene, division freight agent of the Georgia & Florida, has been named district freight agent of the Southern with headquarters, as before, at Valdosta, Ga.; and **Floyd H. Humphreys,** commercial agent of the Southern at Macon, Ga., has been promoted to district freight agent there. Both these appointments become effective October 1.

Thomas A. McDonough, whose appointment as executive general agent of the St. Louis Southwestern at Washington, D. C., was announced in the *Railway Age* of September 1, was born at Montgomery, Ala., on August 18, 1891, and entered railroading in July, 1909, as a clerk-stenographer of the Louisville & Nashville at Montgomery, Ala. He served as a stenographer of the Illinois Central at Atlanta, Ga., from February, 1914, to April, 1915, when he joined the St. Louis Southwestern

Thomas A. McDonough

as soliciting freight agent at Atlanta. He was promoted to traveling freight agent the following December, and returned to that position in 1920 after being furloughed for military service. In September, 1926, Mr. McDonough was advanced to commercial agent, and he became general agent at Atlanta in January, 1929. In February, 1931, he transferred to **Pittsburgh, Pa.,** where he remained until his recent appointment as executive general agent at Washington.

ENGINEERING & SIGNALING

H. Bober, assistant engineer of bridges of the Chicago, Rock Island & Pacific, at Chicago, has been appointed bridge and building engineer of the Alton, with headquarters at Chicago, succeeding **W. F. Rech,** whose death on July 24, was reported in the *Railway Age* of July 28.

C. S. Sanderson has been appointed principal assistant engineer of the Atlantic Coast Line with headquarters at Wilmington, N. C.

MECHANICAL

P. H. Verd has been appointed master mechanic of the Gary division of the Elgin, Joliet & Eastern, with headquarters at Gary, Ind., succeeding **A. R. Murray,** who has been assigned to other duties.

O. R. Barefoot, whose appointment as assistant superintendent motive power, Eastern lines, of the Canadian Pacific at Toronto, Ont., was announced in the *Railway Age* of September 8, entered railroading with the Canadian Pacific in 1909 as a night foreman at North Bay, Ont. Subsequently serving in various capacities at Lambton, Ont., the St. John Shops, and at McAdam, N. B., Mr. Barefoot was named

O. R. Barefoot

master mechanic of the Bruce division at Toronto in 1942, the position he held at the time of his recent promotion to assistant superintendent motive power.

OBITUARY

Frank W. Thomas, retired supervisor of apprentices of the Atchison, Topeka & Santa Fe, died in Topeka, Kan., September 13, 1945, interment taking place at Roanoke, Va. In 1907, when the Santa Fe decided to enlarge and extend its apprentice training facilities, Mr. Thomas, then engineer of tests, was made supervisor of apprentices. Within the next few years a training system was developed which achieved a wide reputation for its thoroughness and high standards. Not only did it supply well-trained craftsmen, but it was the training ground of many of the present mechanical officers of the Santa Fe. Mr. Thomas retired in 1932.

F. G. Lister, superintendent of motive power of the St. Louis-San Francisco, with headquarters at Springfield, Mo., died in a Tulsa, Okla., hospital on August 20. Mr. Lister was born at Marysville, Kan., on July 8, 1882, and studied for two years at the University of Nebraska. His first railway service was with the Wabash in 1901, as a special apprentice, becoming a mechanical draftsman a short time later. In 1906, Mr. Lister went with the Northern Pacific as a locomotive and car draftsman, and five years later he went with the Spokane, Portland & Seattle and affiliated lines as chief draftsman and mechanical engineer, serving this company until 1916, when he became mechanical engineer of the El Paso & Southwestern (now part of the Southern Pacific). In 1924, Mr. Lister was appointed master car repairer on the Southern Pacific, at El Paso, Tex., and in 1926 he left this company to go with the St. Louis-San Francisco as chief mechanical engineer. On January 1, 1931, he was promoted to assistant superintendent of motive power, and two years later he was advanced to the position he held at the time of his death.

Operating Revenues and Operating Expenses of Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF JULY, 1945 AND 1944

Item	United States		Eastern District		Southern District		Western District	
	1945	1944	1945	1944	1945	1944	1945	1944
Miles of road operated at close of month	228,506	228,631	56,005	56,064	43,331	43,363	129,170	129,204
Revenues:								
Freight	$589,583,453	$593,828,720	$208,580,043	$226,640,379	$101,738,592	$108,795,175	$279,264,818	$258,393,166
Passenger	150,734,194	162,197,538	63,380,658	68,317,839	27,885,262	31,223,712	59,468,274	62,655,987
Mail	10,353,854	9,931,761	3,562,360	3,281,680	1,762,844	1,896,246	5,028,650	4,753,835
Express	12,155,144	10,499,651	3,445,269	2,997,147	1,354,542	1,185,223	7,355,333	6,317,281
All other operating revenues	33,301,972	32,580,488	14,388,980	13,930,286	4,378,957	4,357,877	14,534,035	14,292,324
Railway operating revenues	796,128,617	809,038,158	293,357,310	315,167,331	137,120,197	147,458,233	365,651,110	346,412,594
Expenses:								
Maintenance of way and structures	116,547,656	110,160,352	41,213,513	41,121,976	20,342,772	18,532,521	54,991,371	50,505,855
Depreciation	9,837,165	8,768,098	4,315,654	3,807,130	1,565,970	1,394,505	3,955,541	3,566,463
Retirements	1,778,267	1,914,426	278,343	618,875	184,905	291,776	1,315,019	1,003,775
Deferred maintenance	64,466	*223,323	44,343	7,313	.....	.....	20,123	*230,636
Amortization of defense projects	2,329,494	1,740,301	681,785	526,300	411,746	304,002	1,235,963	909,999
Equalization	*712,952	*1,411,008	*975,264	*1,186,684	732,674	388,578	*470,362	*612,902
All other	103,251,216	99,371,858	36,868,652	37,349,042	17,447,477	16,153,660	48,935,087	45,869,156
Maintenance of equipment	139,415,220	132,116,215	55,800,482	55,309,181	26,262,162	25,006,927	57,352,576	51,800,107
Depreciation	18,024,441	17,923,234	7,625,041	7,536,606	3,605,213	3,596,251	6,794,187	6,790,377
Retirements	43,459	*4,921	*48,446	*1,735	*2,276	*1,669	94,181	*1,517
Deferred maintenance and major repairs	*46,545	*37,755	*7,119	*2,170	.....	.....	*39,426	*35,585
Amortization of defense projects	17,974,232	14,047,654	6,145,743	4,655,311	4,317,362	3,584,617	7,511,127	5,807,726
Equalization	*316,171	*14,691	10,996	23,639	*334,225	*2,500	7,058	*35,830
All other	103,735,804	100,202,694	42,074,267	43,097,530	18,676,088	17,830,228	42,985,449	39,274,936
Traffic	11,964,599	12,006,064	4,319,566	4,107,453	2,153,490	2,034,500	5,491,543	5,864,111
Transportation—Rail line	253,531,493	244,253,640	108,465,241	107,874,070	41,793,220	41,348,614	103,273,032	95,030,956
Transportation—Water line	10	154	.....	.....	.....	.....	10	154
Miscellaneous operations	10,361,375	10,128,212	3,739,271	3,690,740	1,607,782	1,584,399	5,014,322	4,853,073
General	17,196,711	16,392,108	7,143,370	6,581,624	3,310,346	3,186,036	6,742,995	6,624,448
Railway operating expenses	549,017,064	525,056,745	220,681,443	218,685,044	95,469,772	91,692,997	232,865,849	214,678,704
Net revenue from railway operations	247,111,553	283,981,413	72,675,867	96,482,287	41,650,425	55,765,236	132,785,261	131,733,890
Railway tax accruals	133,378,103	167,797,963	33,428,299	50,362,287	24,860,420	36,400,588	75,089,384	81,035,088
Pay-roll taxes	19,950,417	19,640,963	8,140,700	8,264,677	3,403,199	3,352,493	8,406,518	8,023,793
Federal income taxes†	87,727,737	122,206,025	14,390,834	30,521,731	16,697,418	27,940,791	56,639,485	63,743,503
All other taxes	25,699,949	25,950,975	10,896,765	11,575,879	4,759,803	5,107,304	10,043,381	9,267,792
Railway operating income	113,733,450	116,183,450	39,247,568	46,120,000	16,790,005	19,364,648	57,695,877	50,698,802
Equipment rents—Dr. balance	12,860,451	12,927,791	3,985,573	5,375,229	d262,489	127,440	9,137,367	7,425,122
Joint facility rent—Dr. balance	3,746,609	3,510,132	1,997,389	1,615,575	420,634	408,059	1,328,586	1,486,498
Net railway operating income	97,126,390	99,745,527	33,264,606	39,129,196	16,631,860	18,829,149	47,229,924	41,787,182
Ratio of expenses to revenues (per cent)	69.0	64.9	75.2	69.4	69.6	62.2	63.7	62.0

FOR SEVEN MONTHS ENDED WITH JULY 1945 AND 1944

Item								
Miles of road operated at close of month	228,528	228,756	56,007	56,102	43,331	43,383	129,190	129,271
Revenues:								
Freight	$4,140,311,787	$4,036,902,327	$1,528,388,247	$1,572,404,233	$785,627,290	$777,957,023	$1,826,296,250	$1,686,541,071
Passenger	969,786,190	1,042,195,359	399,715,051	416,774,454	186,434,939	207,789,379	383,636,200	417,631,526
Mail	73,487,858	71,336,931	24,803,980	23,851,974	12,929,154	13,420,199	35,754,724	34,064,758
Express	94,369,777	82,925,446	27,696,942	27,564,473	13,657,827	12,839,444	53,015,008	42,521,529
All other operating revenues	218,043,513	211,749,716	95,776,096	91,010,234	30,199,861	29,413,996	92,067,556	91,325,486
Railway operating revenues‡	5,495,999,125	5,445,109,779	2,076,380,316	2,131,605,368	1,028,849,071	1,041,420,041	2,390,769,738	2,272,084,370
Expenses:								
Maintenance of way and structures	743,218,416	714,470,624	268,576,596	269,682,410	132,746,597	123,407,293	341,895,223	321,380,921
Depreciation	68,198,435	61,703,934	29,849,575	26,668,856	10,910,849	10,144,308	27,438,011	24,890,770
Retirements	5,793,625	8,482,834	1,075,853	2,928,797	848,476	894,656	3,869,296	4,659,381
Deferred maintenance	*2,502,762	*3,680,213	*737,172	*608,467	.....	.....	*1,765,590	*3,071,746
Amortization of defense projects	15,234,443	10,532,588	4,558,458	3,417,276	2,612,300	1,877,565	8,063,685	5,237,747
Equalization	15,343,985	10,733,969	6,432,234	4,056,030	5,562,591	2,963,099	3,349,160	3,714,840
All other	641,150,690	626,697,512	227,397,648	233,219,918	112,812,381	107,527,665	300,940,661	285,949,929
Maintenance of equipment	962,241,672	917,391,185	391,093,061	385,758,749	183,777,164	171,669,826	387,371,447	359,962,610
Depreciation	125,423,913	124,429,272	52,912,818	52,480,781	25,106,748	24,961,060	47,404,347	46,987,431
Retirements	*51,773	*2,593	*64,882	593	*50,828	*1,669	63,937	*1,517
Deferred maintenance and major repairs	*952,740	*873,680	*17,831	10,034	.....	.....	*934,909	*883,714
Amortization of defense projects	122,789,857	94,260,025	41,119,527	31,203,832	29,736,909	24,445,571	51,933,421	38,610,622
Equalization	290,380	157,126	*3,789	108,970	141,002	*6,446	153,167	54,602
All other	714,742,035	699,421,035	297,147,218	301,954,539	128,843,333	122,271,310	288,751,484	275,195,186
Traffic	82,767,054	78,259,059	29,629,614	28,072,292	15,518,072	13,955,352	37,619,368	36,231,415
Transportation—Rail line	1,767,850,113	1,707,516,080	783,509,883	763,543,837	298,720,423	289,404,285	685,619,807	654,567,958
Transportation—Water line	1,219	4,825	.....	.....	.....	.....	1,219	4,825
Miscellaneous operations	68,325,316	69,053,157	25,020,110	24,478,404	10,694,482	11,399,355	32,610,724	33,175,398
General	120,359,173	116,139,664	48,631,253	46,674,722	23,208,399	22,304,881	48,519,521	47,160,061
Railway operating expenses	3,744,762,963	3,602,834,594	1,546,460,517	1,518,210,414	664,665,137	632,140,992	1,533,637,309	1,452,483,188
Net revenue from railway operations	1,751,236,162	1,842,275,185	529,919,799	613,394,954	364,183,934	409,279,049	857,132,429	819,601,182
Railway tax accruals	1,005,930,355	1,076,735,355	253,902,200	319,221,526	229,310,802	259,221,684	522,717,353	498,292,145
Pay-roll taxes	135,888,970	134,364,927	56,629,929	56,649,228	23,513,542	23,446,668	55,745,499	54,269,031
Federal income taxes†	685,759,281	766,102,774	114,866,532	188,378,711	170,651,172	199,823,190	400,241,577	377,900,873
All other taxes	184,282,104	176,267,654	82,405,739	74,193,587	35,146,088	35,951,826	66,730,277	66,122,241
Railway operating income	745,305,807	765,539,830	276,017,599	294,173,428	134,873,132	150,057,365	334,415,076	321,309,037
Equipment rents—Dr. balance	84,912,076	89,227,413	40,170,856	40,904,268	551,476	5,025,324	44,189,744	43,297,821
Joint facility rent—Dr. balance	24,398,774	24,141,631	12,199,662	11,597,541	2,732,544	2,743,199	9,466,568	9,800,891
Net railway operating income	635,994,057	652,170,786	223,647,081	241,671,619	131,589,112	142,288,842	280,758,764	268,210,325
Ratio of expenses to revenues (per cent)	68.1	66.2	74.5	71.2	64.6	60.7	64.1	63.9

* Decrease, deficit, or other reverse items.

† Includes income tax, surtax, and excess-profits tax.

‡ Railway operating revenues are after deduction of $24,350,202 for the seven months ended with July 1945 and $27,522,203 for the seven months ended with July 1944 to create a reserve for land grant deductions in dispute.

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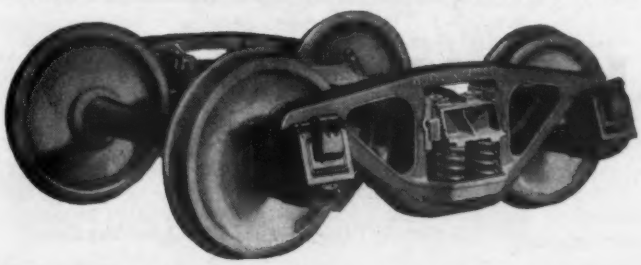

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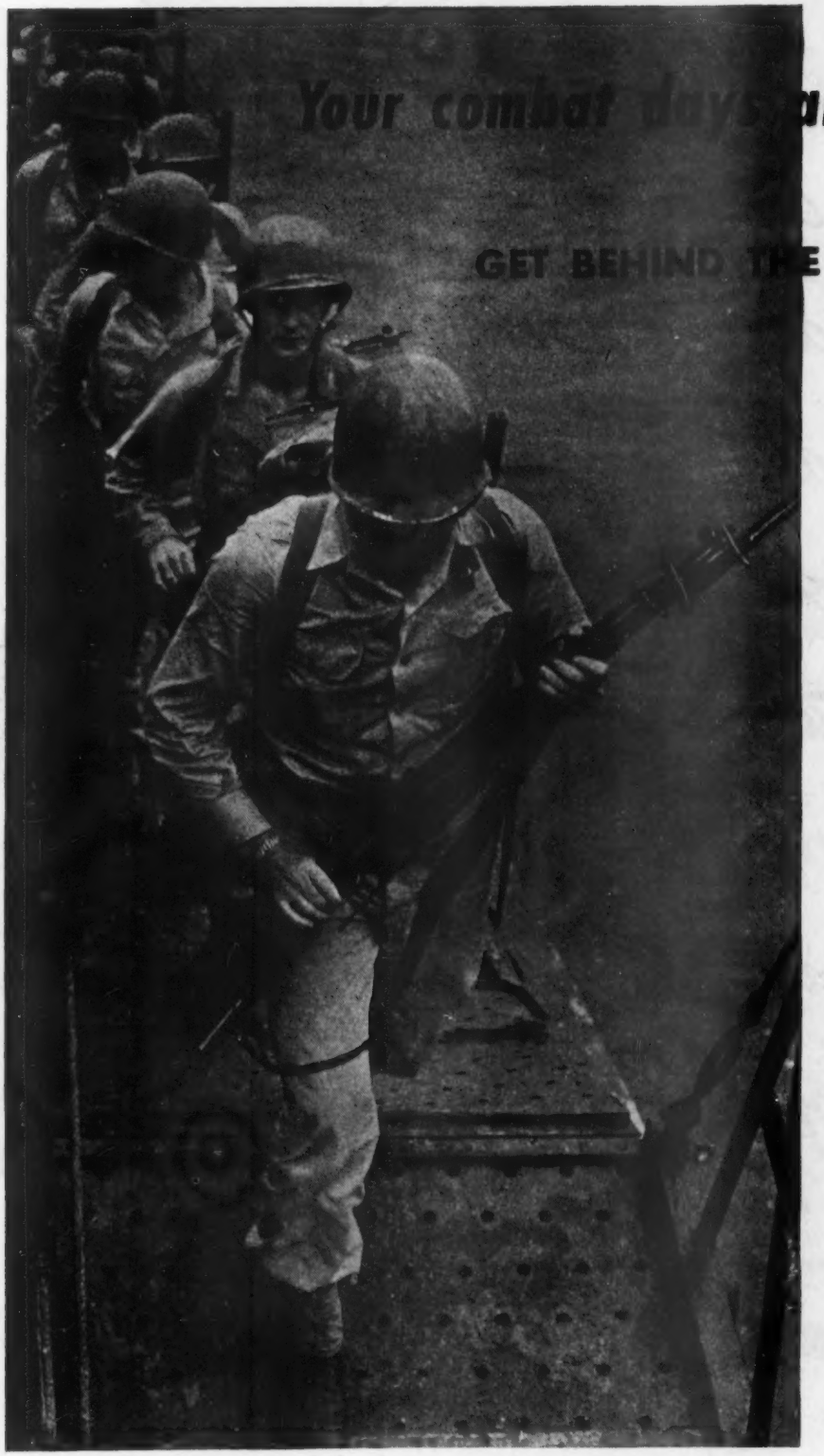

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THE RAILROADS *and* PUBLIC WELFARE

Their Problems and Policies

By EMORY R. JOHNSON, M.L., Ph. D., Sc. D.

Professor Emeritus of Transportation and Commerce, Wharton School of Finance and Commerce, University of Pennsylvania

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with recent experience on railway freight and passenger cars to act as chief engineer with important car building shop in China. Opportunity for technically trained engineer with practical shop experience as well as executive ability. Prefer candidate not over 45 years of age. Address Box 762, Railway Age, 30 Church Street, New York 7, N. Y.

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Model 250 Brill Gas Electric all steel combination passenger, baggage and mail car new in 1928. Now being completely rebuilt.

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80, Hopper, Side Discharge, 50-Ton
10, Refrigerator, 40-Ft., 40-Ton
10, Box, 40-Ft., 40-Ton
7, Box, Automobile, Steel, 50-Ft., 50-Ton
6, Dump, Magor, 30-Yd., 50-Ton; Lift Door
1, Dump, Clark, Automatic, 30-Yd., 50 Ton; Drop Door
4, Dump, K & J Automatic, Lift Door; 37-Yd., 50-Ton
20, Dump, Koppel, Automatic, 20-Yd., 40-Ton; Lift Doors
10, Dump, K & J Automatic Lift Door; 20-Yd., 50-Ton
2, Dump, K & J, Lift Door, 37-Yd., 50-Ton
25, Tank, 8000-Gallon, 40-Ton Trucks
300, Tank, 10,000-Gallon, 50-Ton Trucks

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Fires in signal towers can travel up the cables and destroy expensive interlocking machines, and tie up busy yards and mainline trackage. Therefore, it is essential to use non-flammable cables in all towers.

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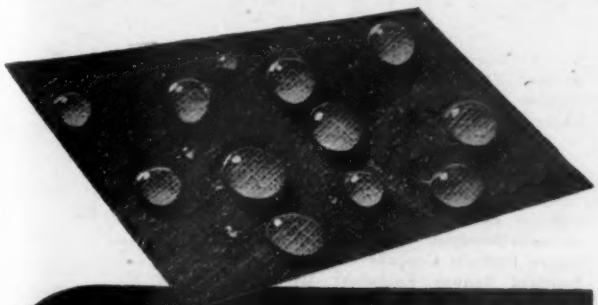

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Just ONE of 109 types and sizes BLAW-KNOX BUCKETS

So many things affect the efficient performance of a bucket . . . material to be handled, hook capacity, side and head clearance, etc.

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HERE'S QUICK INFORMATION

Bulletin 1989 classifies and illustrates the Blaw-Knox buckets most widely used by railroads—from ash pits to river-rail transfers. Your request will bring a copy by return mail.

Index to Advertisers

September 29, 1945

WITH SYMINGTON SBS SNUBBERS

Bounce and sway, the two destructive forces that attack lading, equipment and roadbed are eliminated by Symington SBS Snubbers. Proved by over four years of dependable service under the most gruelling wartime conditions, SBS Snubbers effectively control spring oscillation . . . smooth out the ride.

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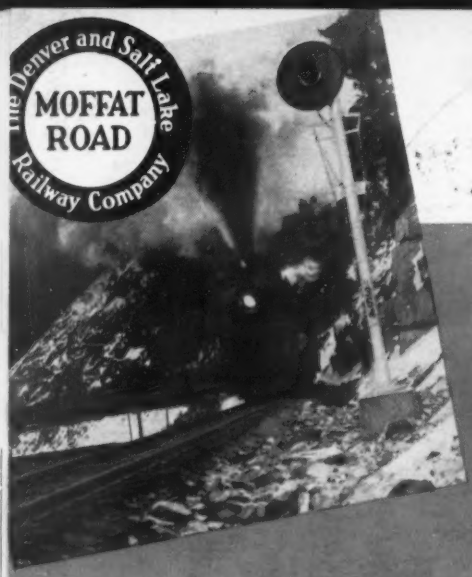
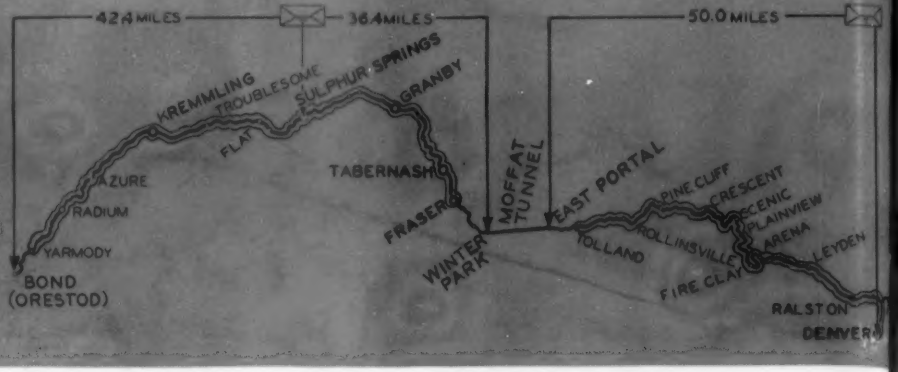


NORMALLY DEENERGIZED CODED TRACK CIRCUITS . . .



. . . with CENTRALIZED TRAFFIC CONTROL:

The Denver and Salt Lake Railroad has just completed 128.8 miles of G-R-S Centralized Traffic Control using normally deenergized coded track circuits. This is the longest installation of its kind in which all the coded track circuits are normally deenergized.

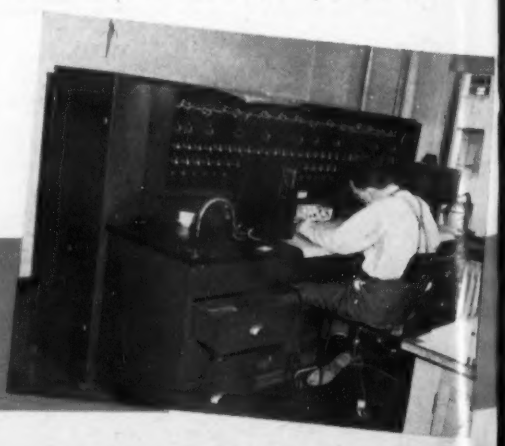
When the operator of the CTC machine sets up a route, only the circuits in this particular route are energized. Controlled signals are normally lighted and intermediate signals are series approach lighted at about 4000 feet. As soon as a train has cleared a station to station block, if there are no other trains in either adjacent block, the signal operating coils, all relays and code transmitters are automatically returned to deenergized condition. They remain deenergized until the CTC operator makes another line-up over the route.

This installation has proven very economical for the Denver and Salt Lake Railroad. Records show that as many as 60 trains have been handled in a 24-hour period with considerable train-time savings as compared to previous method of operation.

Some important advantages offered by this new development are:

1. Total power consumption varies according to the density of traffic. When there is no traffic, no power is used.
2. The savings in installation costs and maintenance are considerable because no signal control line wires are necessary.
3. Compared to an ordinary straight automatic block system fewer intermediate blocks are required to handle the traffic without delays to following trains.
4. In some instances we can now supply CTC, built around this new idea, for only a little more than you would have to spend for an ordinary straight automatic block system.

Ask our nearest District Office for particulars.



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